PREFACE

The twenty-second Particle Accelerator Conference, PAC'07, took place at the Albuquerque Convention Centre in Albuquerque, the largest city in New Mexico, from Monday to Friday, 2007 June 25 to 29. It was attended by over 1350 delegates from 25 different countries (63% North America, 24% Europe, 11% Asia and 2% Other), and was held under the auspices of the two professional societies that oversee and make holding this series of conferences possible, the Division of Physics of Beams within APS, and the Nuclear and Plasma Sciences Society within IEEE. As host of the conference, Los Alamos National Laboratory (LANL) is especially thanked for their many contributions and assistance both prior to and during the conference. The Convention Center was an ideal location for information sharing and discussions between the interdisciplinary aspects of the accelerator community, as well as for related meetings and ad-hoc "rump" sessions.

As an incentive for joining the professional societies, PAC'07 was the first PAC conference to offer reduced conference registration fees for IEEE-NPSS and APS-DBB members, as well as for retirees and students.

Prior to official start of the conference, a PAC'07 sponsored Science Weekend open to the public was a successful event held in the lower lobby of the Convention Center on Saturday June 23. Many young individuals experienced the wonders of magnets, electricity, plasmas and vacuum. On Sunday afternoon June 24, a special student poster session was held to allow young researchers to interact with each other and to provide a forum for reviewing their work by peers in the community.

As at previous conferences in the series, the attendance of 70 young scientists from all over the world was made possible by sponsorship from ANL, APS-DPB, EPS-AG, IEEE-NPSS, LBNL, NSF and TJNAF. In addition, four \$500 cash awards and two honorable mention certificates for best student papers were awarded, sponsored by IEEE-NPSS and EPS-AG.

Stan Schriber, LANL and Michigan State University, Chair of the PAC Organizing Committee (OC) opened the conference. CERN's Lyndon Evans, Leader of the LHC Project, opened the scientific program with a presentation entitled *LHC: Construction and Commissioning Status*. Chan Joshi, UCLA, gave the closing presentation on *Plasma Accelerators – Progress and the Future*. Two hundred and twenty-one invited and contributed oral presentations of very high quality were made during the week.

An excellent scientific program was organized by the Scientific Program Committee (SPC) chaired by Robert Garnett, LANL. It spanned five days, with scientific plenary sessions Monday morning and Friday afternoon. Also in plenary session were the Awards Ceremony and a special session on International Industrial Forums for the ILC. Three parallel oral sessions were held the rest of the week, with seven poster sessions scheduled throughout the week. The scientific program boasted 121 invited papers, 100 contributed oral presentations, and more than 1400 poster presentations, and 1400 contributions are published in the present proceedings.

An industrial exhibition (intermixed with the poster and coffee break areas) took place during the first three days of the conference. Sixty-four companies presented their high technology products and services to the delegates in an excellent atmosphere conducive to discussions. Their participation enhanced the scope of the conference.

The Awards Ceremony in honor of Louis Costrell's many contributions for PAC over the years (now named the Louis Costrell Awards Session) was a highlight of the conference. Lee Teng of ANL received the APS Robert R. Wilson Prize, Jeroen van Tilborg of LBNL and TU-Eindhoven received the APS Award for outstanding doctoral thesis research in beam physics. Two IEEE-NPSS awards went jointly to Satoshi Ozaki and Michael Harrison of BNL for leadership in the successful design and construction of RHIC, and to Victor Malka, CNRS, Palaiseau, for groundbreaking work on laser-plasma accelerators.

The US Particle Accelerator School awards went to Sergei Nagaitsev, FNAL, and to Yaroslav Derbenev, JLAB. Furthermore, Mark Hogan, SLAC; Norbert Holtkamp, ITER (formerly ORNL); Alexander Lumpkin, ANL; Lia Merminga, TJNAF; Sergei Nagaitsev, FNAL and Petr Ostroumov, ANL were announced as newly elected APS-DPB Fellows. Wim Leemans, LBNL and Warren Mori, UCLA were announced as newly elected IEEE-NPSS Fellows relevant to the field of accelerators.

The special Physics Teacher's Day held Wednesday June 27 was a great success because of the time and effort contributed by Hillary Smith, Mike Thout, Dave Swellenbach, Jacob Flanz, Alan Hurd, Bruce Carlsten and S. Y. Lee.

The conference banquet with preceding reception entertained by a traveling mariachi band (Mariachi Nuevo Sonido) was a big success with 1020 attendees. The highlight of the banquet was the Ice Mountain Dance Group, especially the very young members of this local dance troupe. The companion program was well attended and explored

many interesting regions of the Land of Enchantment. Although there were last-minute "glitches" to the Los Alamos area tour, most participants enjoyed the opportunity to see some of the aspects of Los Alamos and the Bandelier National Monument. We apologize to those affected by last minute changes to the tour made by LANL officials.

The main medium for the proceedings of this conference is publication on the JACoW site (www.jacow.org). There will be no hard copy volumes. The processing of the electronic files of contributions prior to, during and after the conference, was achieved by a dynamic team composed of 17 "seasoned experts" and volunteers from the Joint Accelerator Conferences Website (JACoW) collaboration. Thanks to the dedicated, professional job accomplished by this team, a pre-press version of these proceedings was published less than 5 working days after the conference. This final version is published at the JACoW site one month after the conference.

Two significant actions took place during the conference that will have impacts for future PAC conferences in North America. At the PAC OC Tuesday evening meeting it was approved unanimously to join the Europeans and Asians in a three-year-cycle international conference series while maintaining a North American PAC series interspersed with these international conferences such that a PAC type conference (international or North American) will occur in North America on an approximate 18 month separation schedule. The second action was a unanimous approval by the PAC Coordinating Committee (composed of past, present and future PAC, EPAC and APAC chairs) to start the international series of conferences in 2010 in Kyoto, Japan, with 2011 in Valencia, Spain and 2012 in North America (location TBD). Our next North American PAC style conferences will be held in Vancouver, Canada in 2009 and in New York, New York in 2011.

Special thanks on behalf of the attendees, sponsoring agencies and the host go to all who helped in numerous ways before, during and after the conference. Their dedicated and enthusiastic efforts made the conference a success and made the whole process function smoothly. We ran into a number of "glitches" that were handled in a professional and appropriate manner, without detracting from the main aspect of the conference. The success of PAC'07 can be attributed to the efforts of the OC, the SPC, and the LOC chaired by Tsuoyoshi Tajima: Shirley Atencio, Alberto Canabal, Michael Carter, John Eddleman, Sherry Hardage, Robb Kramer, Roberta Lopez, Vangie Martinez, Valerie Miller, Christine Petit-Jean-Genaz, William Roybal, Andrea Sanchez, Rich Sheffield, Hillary Smith, Tamson Smith, Lorraine Stanford and Peggy Vigil, and to all of the volunteers from future and past PACs and from our sister conferences EPAC and APAC, who joined the team during the conference proper. All contributed untiringly to making this conference a success.

Sincere thanks to two special individuals who worked many extra hours and gave up much of their usual lifestyle to ensure that this conference would be an outstanding success. Behind the scenes encouraging everyone on the team was Christine Petit-Jean-Genaz, and up front was Lorraine Stanford. Without their support, guidance, encouragement and constant advice, I would not have been able to perform my role as chair of the conference.

Stan Schriber, Chair of the PAC'07 Organizing Committee



COMMITTEES AND CONFERENCE STAFF

Organizing Committee

Stan Schriber, LANL/MSU, Chair Ilan Ben-Zvi, BNL, IEEE/NPSS Liaison Joe Bisognano, Wisconsin Univ., APS-DPB Liaison Christopher Prior, U. Oxford and RAL, EPAC'06 Chair Vinod Sahni, RRCAT, APAC'07 Chair

John Cary, University of Colorado Swapan Chattopadhyay, Cockcroft Inst., formerly JLab Louis Costrell, NIST Dennis Friesel, Indiana University John Galayda, SLAC Stephen Gourlay, LBNL Georg Hoffstaetter, Cornell University Norbert Holtkamp, ITER, formerly ORNL Shin-Ichi Kurokawa, KEK Christine Petit-Jean-Genaz, CERN Thomas Roser, BNL Paul Schmor, TRIUMF (PAC 2009 Chair) John Seeman, SLAC (PAC 2003 Chair Representative) Vladimir Shiltsev, Fermilab Bruce Strauss, DOE observer Dave Sutter, University of Maryland Alan Todd, AES (Industrial Representative) Tom Wangler, LANL Bill Weng, BNL (PAC 2011 Chair) Glen Westenskow, LLNL Marion White, ANL

Scientific Program Committee

Bob Garnett, LANL, PAC07 Program Chair Joe Bisognano, Univ. of Wisconsin, Program Assistant Chair Caterina Biscari, INFN/LNF, EPAC06 Program Chair Swapan Chattopadhyay, Cockcroft Institute, PAC05 Program Chair

Yuri Alexahin, FNAL Timothy A. Antaya, MIT Gianluigi Arduini, CERN Rakesh Bhandari, VECC Frank Bieniosek, LBNL Hans Bluem, AES David Bruhwiler, Tech-X Corp. John Byrd, LBNL Bruce Carlsten, LANL Rod Keller, LANL Mark Champion, ORNL Yu-Jiuan Chen, LLNL Jinhyuk Choi, Pohang Acc. Lab Eric Colby, SLAC John Corlett, LBNL Jean Delayen, JLab Wolfram Fischer, BNL Alex Friedman, LBNL Warren Funk, JLab Doug Gilpatrick, LANL Terry Grimm, MSU David Gurd, ORNL Kathy Harkay, ANL Stuart Henderson, ORNL Enrique Henestroza, LBNL Ingo Hofmann, GSI Tom Hughes, Voss Scientific

Andrew Hutton, JLab Alan Jackson, Australian Sync. Proj. Ken Jacobs, SRC/U. Wisconsin Chan Joshi, UCLA Rod Keller, LANL Kwok Ko, SLAC Shane Koscielniak, TRIUMF Ioanis Kourbanis, FNAL Shin-ichi Kurokawa, KEK Jean-Michel Lagniel, CEA Bob Laxdal, TRIUMF Shyh-Yuan Lee, Indiana U. Wim Leemans, LBNL L. K. Len, DOE Alan Letchford, Rutherford - ISIS John Lewellen, ANL Felix Marti, MSU Gerry McMichael, ANL Lia Merminga, JLab Sergei Nagaitsev, FNAL Kurt Nielsen, LANL Pat O'Shea, U. Maryland Petr Ostroumov, ANL Hasan Padamsee, Cornell U. Michael Plum, ORNL Eric Prebys, FNAL

Deepak Raparia, BNL Dan Rees, LANL Leonid Rivkin, PSI James Rosenzweig, UCLA David Rubin, Cornell U. Francesco Ruggeiro, CERN Brian Rusnak, LLNL Lawrence Rybarcyk, LANL Alwin Schempp, IAP Thomas Shea, ORNL Tsumoru Shintake, RIKEN Igor Shumakov, MRTI Charles Sinclair, Cornel U. Panagiotis Spentzouris, FNAL Jeff Stetson, MSU Peter Stoltz, Tech-X Corp. Bruce Strauss, DOE Will Waldron, LBNL Peter Wanderer, BNL Robert Webber, FNAL Jie Wei. BNL Ulrich Wienands, SLAC Vitaly Yakimenko, BNL Yoshishige Yamazaki, JAERI Wu Zhang, BNL Alexander Zlobin, FNAL

Local Organizing Committee

Tsuyoshi Tajima, LANL/AOT, Chair, LANL Tours Lorraine Stanford, LANL/IAT-2, Conference Coordinator, Satellite Meetings

Shirley Atencio, LANL/CFO-3, Finance Alberto Canabal, LANL/AOT, Student Coordinator Michael Carter, LANL/ISR-3, Information Technology John Eddleman, LANL/AOT, Industrial Exhibits Sherry Hardage, LANL/IAT-2, Editor Robert Kramer, LANL/LANSCE, Web, Publication Design Evangeline Martinez, LANL/ISR-DO, Registration Christine Petit-Jean-Genaz, CERN, Conference Editor William Roybal, LANL/AOT, Poster Session Manager Andrea Sanchez, LANL/C-IIAC, Companion Coord. Rich Sheffield, LANL/LANSCE, Awards Manager Hillary Smith, LANL/LANSCE, Outreach Coordinator Tamson Smith, LANL/LANSCE, Exhibition Manager

* Special thanks to Sandi Miller, TRIUMF/PAC09 Conference Coordinator, for overseeing registration set-up.

Proceedings Office

Editorial Team

Ivan Andrian, Sincrotrone Trieste Christian Carli, CERN Jan Chrin, PSI Martin Comyn, TRIUMF Audra Espinosa, LANL Cathy Eyberger, APN Sherry Hardage, LANL/IAT-2 Charlie Horak, ORNL/SNS Maksim Kuzin, INP Leif Liljeby, MSI Michaela Marx, DESY Alain Mauri, Sincrotrone Trieste Christine Petit-Jean-Genaz, CERN Leandro Piazza, LNS John Poole, CERN Julie Qintana-Valdez, LANL Luce Salas, LANL

Volker Schaa, GSI Hirokazu Tanaka, KEK Jana Thomson, TRIUMF Database

Matt Arena, FNAL

IT

Michael Carter, LANL

Paper Reception Jean Trujillo, LANL Sam Vanecek, LBNL

INDUSTRIAL EXHIBITORS

ACCEL Instruments AccelSoft Inc. Advanced Design Consulting Advanced Energy Systems Advanced Magnet Lab, Inc. AFT Inc. Agilent Technologies, Inc/Acqiris Operation Altair Technologies, Inc. Amuneal Manufacturing Corporation Babcock Noell GmbH Bergoz Instrumentation Bira Systems, Inc. Bruker Biospin Burle Industries, Inc. Ceramic Magnetics CML Engineering Communications & Power Industries, Inc. **Continental Electronics** Cosylab, Ltd. CST of America Danfysik Diversified Technologies, Inc. e2v Euclid TechLabs LLC Everson Tesla Inc. Far-Tech, Inc. FMB Feinwerk und Messtechnik **GMW** Associates Hi-Tech Manufacturing HV Component Associates IE Power Inc. Instrumentation Technologies

JB Technical Kurt J. Lesker Co. L3 Lambda Americas High Power Mega Industries Meyer Tool & Mfg., Inc. Microwave Amplifiers Ltd. Minarik Automation Muons, Inc Nanomotion Inc. Niowave. Inc. Pearson Electronics **OEI** Corporation RadiaBeam Technologies Roark Custom Metal Fabrication SAES Getters USA SCANDINOVA SYSTEMS AB **SDMS** SIGMAPHI Simulation Technology & Applied Research Struck Innovative Systems Tech-X Corporation Thales Components Corporation The Ferrite Company Thomson Broadcast & Multimedia AG Toshiba Electron Tubes & Devices Co., Ltd Triumf VARIAN S.p.A. Italy General Administration VAT Inc. Vector Fields Ltd. Wiener, Plein & Baus, Ltd.

LIST OF PARTICIPANTS

Abe, Tetsuo Abell, Dan Abrams, Robert Ackermann, Wolfgang

Adolphsen, Chris Agustsson, Ronald Akre, Ron Alabau, Maria del Carmen Aleksandrov, Alexander

Alessi, James Alexahin, Yuri

Allen, Christopher Allison, Trent Alsharo'a, Mohammad Amer, Luke Amirikas, Ramila Amundson, James Anderson, Oscar Anderson, Scott Andersson, Alexandra Andonian, Gerard Andrews, Heather Andrian, Ivan Anferov, Vladimir Antici, Patrizio Antipov, Sergey Ao, Hiroyuki Apollonio, Marco Arduini, Gianluigi Arena, Matthew Arevalo, Edward

Artoos, Kurt Atencio, Shirley Atencio, Tanya Baartman, Richard Baboi, Nicoleta Bacci, Alberto

Bach, Henning Baek, Inseok

Bahrdt, Johannes

Bai, Mei Bailey, James Bailey, Roger Baker, Peter Balkcum, Adam Balmes, Andy High Energy Accelerator Research Organization, Japan Tech-X Corporation, United States of America Muons, Inc, United States of America Institut fuer Theorie Elektromagnetischer Felder Technische Universitaet Darmstadt, Germany Stanford Linear Accelerator Center, United States of America RadiaBeam Technologies, United States of America Stanford Linear Accelerator Center, United States of America Laboratoire de l'Accelerateur Lineaire, France Oak Ridge National Laboratory Spallation Neutron Source, United States of America Brookhaven National Laboratory, United States of America Fermi National Accelerator Laboratory Accelerator Division, United States of America Los Alamos National Laboratory, United States of America Thomas Jefferson National Accelerator Facility, United States of America Muons, Inc, United States of America Los Alamos National Laboratory AOT Division, United States of America Deutsches Elektronen-Synchrotron, Germany Fermi National Accelerator Laboratory, United States of America Lawrence Berkeley National Laboratory, United States of America University of California Physics Department, United States of America European Organization for Nuclear Research, Switzerland University of California, Los Angeles, United States of America Vanderbilt University, United States of America Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Indiana University Cyclotron Facility, United States of America Ecole Polytechnique Laboratoire d'Utilisation des Lasers Intenses, France Illinois Institute of Technology, United States of America Japan Atomic Energy Agency Linac Laboratory, Japan Oxford University Physics Department, United Kingdom European Organization for Nuclear Research, Switzerland Fermi National Accelerator Laboratory, United States of America Institut fuer Theorie Elektromagnetischer Felder Technische Universitaet Darmstadt, Germany European Organization for Nuclear Research, Switzerland Los Alamos National Laboratory, United States of America Los Alamos National Laboratory AOT Division, United States of America TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Deutsches Elektronen-Synchrotron, Germany Istituto Nazionale di Fisica Nucleare Laboratorio Acceleratori e Superconduttivita Applicata, Italy Danfysik A/S, Denmark Michigan State University National Superconducting Cyclotron Laboratory, United States of America Berliner Elektronenspeichering-Gesellschaft für Synchrotronstrahlung m.b.H., Germany Brookhaven National Laboratory, United States of America Argonne National Laboratory, United States of America European Organization for Nuclear Research, Switzerland New Affiliation Request Pending, Unknown Communications & Power Industries, Inc., United States of America Los Alamos National Laboratory AOT Division, United States of America

Bandura, Laura Northern Illinois University, United States of America Banna, Samer Brookhaven National Laboratory, United States of America Baptiste, Kenneth Lawrence Berkeley National Laboratory, United States of America Barbero-Soto, Esther European Organization for Nuclear Research, Switzerland Barish, Barry California Institute of Technology, United States of America Barlow, David Los Alamos National Laboratory LANSCE Division, United States of America Barlow, Roger Cockcroft Institute The University of Manchester, United Kingdom Barnard, John University of California Physics Department, United States of America Barnes, Michael European Organization for Nuclear Research, Switzerland Barranco, Javier European Organization for Nuclear Research, Switzerland Bassi, Gabriele University of New Mexico, United States of America Old Dominion University, United States of America BastaniNejad, Mahzad Colorado University at Boulder, United States of America Bauer, Carl Bayer, Wolfgang Gesellschaft f. Schwerionenforschung mbH Accelerator Physics Division, Germany Bazarov, Ivan Cornell University Department of Physics, United States of America University of Maryland Institute for Research in Electronics and Applied Physics, Beaudoin, Brian United States of America Beebe-Wang, Joanne Brookhaven National Laboratory, United States of America Bees, George Lambda Americas, United States of America Bell, George Tech-X Corporation, United States of America Belomestnykh, Sergey Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education, United States of America Benabderrahmane, Chamseddine Synchrotron Soleil, France Benedetti, Carlo Bologna University, Italy Bengtsson, Johan Brookhaven National Laboratory National Synchrotron Light Source, United States of America Thomas Jefferson National Accelerator Facility, United States of America Benson, Stephen Ben-Zvi, Ilan Brookhaven National Laboratory, United States of America Bernal, Santiago University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Bernhard, Axel University of Karlsruhe, Germany Bertolini, Alessandro Deutsches Elektronen-Synchrotron, Germany Bettoni, Simona Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Biagini, Maria Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Biallas, George Thomas Jefferson National Accelerator Facility, United States of America Biedron, Sandra Argonne National Laboratory Office of Naval Research Project, United States of America Bieniosek, Frank Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Billen, James Los Alamos National Laboratory, United States of America Billing, Michael Cornell University Department of Physics, United States of America Birkel, Ingrid Forschungszentrum Karlsruhe GmbH Institute for Synchrotron Radiation, Germany Biscari, Caterina Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Bishofberger, Kip Fermi National Accelerator Laboratory, United States of America Bisognano, Joseph University of Wisconsin-Madison Engineering Physics, United States of America Biswell, Phillip Bira Systems, Inc., United States of America Bjorklund, Eric Los Alamos National Laboratory AOT Division, United States of America Blackfield, Donald Lawrence Livermore National Laboratory, United States of America Brookhaven National Laboratory, United States of America Blaskiewicz, Michael Blednykh, Alexei Brookhaven National Laboratory, United States of America Blind, Barbara Los Alamos National Laboratory AOT Division, United States of America Blokland, Willem Oak Ridge National Laboratory Spallation Neutron Source, United States of America Blosser, Henry Michigan State University National Superconducting Cyclotron Laboratory, United States of America Bluem, Hans Advanced Energy Systems, United States of America

Blumenfeld, Ian Stanford University, United States of America European Organization for Nuclear Research, Switzerland Boccardi, Andrea Bocchetta, Carlo Instrumentation Technologies, Slovenia Thomas Jefferson National Accelerator Facility, United States of America Bodenstein, Ryan Indiana University Cyclotron Facility, United States of America Bogdanov, Alexander Bogomyagkov, Anton Russian Academy of Sciences The Budker Institute of Nuclear Physics, Russia Bolton, Caroline Los Alamos National Laboratory AOT Division, United States of America Bonatto, Alexandre Universidade Federal do Rio Grande do Sul Istituto de Fisica UFRGS, Brazil Bontoiu, Cristian Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Boogert, Stewart University College London, United Kingdom Borden, Michael Los Alamos National Laboratory LANSCE Division, United States of America Argonne National Laboratory Advanced Photon Source, United States of America Borland, Michael University of Wisconsin-Madison Synchrotron Radiation Center, United States of Bosch, Robert America Boscolo, Manuela Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Bower, Gary Stanford Linear Accelerator Center, United States of America Bracco, Chiara Ecole Polytechnique Federale de Lausanne, Switzerland Bradley III, Joseph Los Alamos National Laboratory, United States of America Brajuskovic, Bran Argonne National Laboratory Advanced Photon Source, United States of America Branlard, Julien Fermi National Accelerator Laboratory Accelerator Division, United States of America Bravin, Enrico European Organization for Nuclear Research, Switzerland Brennan, Joseph Brookhaven National Laboratory, United States of America Brodbar, Debbie American Physical Society, United States of America Science and Technology Facilites Council Rutherford Appleton Laboratory, United Brooks, Stephen Kingdom Brossard, Julien Laboratoire de l'Accelerateur Lineaire, France Brown, Bruce Fermi National Accelerator Laboratory Main Injector Dept, United States of America Brown, Charles Lawrence Livermore National Laboratory, United States of America Bruhwiler, David Tech-X Corporation, United States of America Bruning, Oliver European Organization for Nuclear Research, Switzerland Bruno, Donald Brookhaven National Laboratory, United States of America Bruns, Warner Warner Bruns Feldberechnungen, Germany Berliner Elektronenspeichering-Gesellschaft für Synchrotronstrahlung m.b.H., Buerkmann-Gehrlein, Klaus Germany Bungau, Adriana Cockcroft Institute The University of Manchester, United Kingdom Burkhardt, Helmut European Organization for Nuclear Research, Switzerland Burov, Alexey Fermi National Accelerator Laboratory, United States of America Brookhaven National Laboratory, United States of America Burrill, Andrew Burrows, Philip John Adams Institute, United Kingdom Burt, Graeme New Affiliation Request Pending, Unknown Busby, Richard Tech-X Corporation, United States of America Bylinskii, Iouri TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Byrd, John Lawrence Berkeley National Laboratory, United States of America Byrne, Warren Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Cagle, Larry HV Component Associates, United States of America Cai, Yunhai Stanford Linear Accelerator Center, United States of America Calabretta, Luciano Istituto Nazionale di Fisica Nucleare Laboratori Nazionali del Sud, Italy Naples University Federico II Mathematical, Physical and Natural Sciences Campajola, Luigi Faculty, Italy Oak Ridge National Laboratory Spallation Neutron Source, United States of Campisi, Isidoro America Canabal, Alberto Los Alamos National Laboratory, United States of America Candel, Arno Stanford Linear Accelerator Center, United States of America

Caporaso, George University of California, United States of America Carcagno, Ruben Fermi National Accelerator Laboratory, United States of America Thomas Jefferson National Accelerator Facility, United States of America Cardman, Lawrence Universidad Nacional de Colombia Departamento de Fisica, Colombia Cardona, Javier Carli, Christian European Organization for Nuclear Research, Switzerland Los Alamos National Laboratory, United States of America Carlsten, Bruce Carr, Bradley Minarik, United States of America Carr, Gary Los Alamos National Laboratory LANSCE Division, United States of America Carter, Michael Los Alamos National Laboratory, United States of America Carwardine, John Argonne National Laboratory, United States of America Casalbuoni, Sara Forschungszentrum Karlsruhe GmbH Institute for Synchrotron Radiation, Germany Caspers, Fritz European Organization for Nuclear Research, Switzerland Caspi, Shlomo Lawrence Berkeley National Laboratory, United States of America Cassel, Richard Stangenes Industries, United States of America Celata, Christine Lawrence Berkeley National Laboratory, United States of America Chae, Yong-Chul Argonne National Laboratory, United States of America Champion, Mark Fermi National Accelerator Laboratory Technical Division, United States of America Chan, Andrea Stanford Linear Accelerator Center, United States of America Chan, Kwok-Chi Los Alamos National Laboratory, United States of America Chance, Antoine Commissariat a l'Energie Atomique Centre d'Etudes Nucleaires de Saclay, France National Synchrotron Radiation Research Center, Taiwan Chang, Jui-Chi Chang, Xiangyun Brookhaven National Laboratory, United States of America Chao, Yu-Chiu Thomas Jefferson National Accelerator Facility, United States of America Chase, Brian Fermi National Accelerator Laboratory Accelerator Division, United States of America Chattopadhyay, Swapan Cockcroft Institute, United Kingdom Chen, Chiping Massachusetts Institute of Technology Plasma Science and Fusion Center, United States of America Chen, Nian Shanghai Synchrotron Radiation Facility, People's Republic of China Chen, Ping DULY Research Inc., United States of America Chen, Yu-Jiuan University of California, United States of America Thomas Jefferson National Accelerator Facility, United States of America Cheng, Gary Cheng, Yi Imperial College of Science and Technology Department of Physics, United Kingdom Chiadroni, Enrica Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Chin, Yong Ho High Energy Accelerator Research Organization Accelerator Laboratory, Japan Chinzi, Jean Private Address, France Cho, Yanglai Argonne National Laboratory Advanced Photon Source, United States of America Chohan, Vinod European Organization for Nuclear Research, Switzerland Choi, Eunmi Massachusetts Institute of Technology Plasma Science and Fusion Center, United States of America Choroba, Stefan Deutsches Elektronen-Synchrotron, Germany Chou, Ping National Synchrotron Radiation Research Center, Taiwan Chou, Weiren Fermi National Accelerator Laboratory, United States of America Chrin, Jan Paul Scherrer Institute, Switzerland Christou, Chris Diamond Light Source Ltd, United Kingdom Korea Atomic Energy Research Institute, Republic of Korea Chung, Byungchul Chung, Moses Princeton Plasma Physics Laboratory, United States of America Church, Michael Fermi National Accelerator Laboratory, United States of America Citadini, James National Synchrotron Light Laboratory, Brazil Clarke, Christine Queen Mary University of London, United Kingdom Clarke-Gayther, Michael Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Clayton, Chris University of California, Los Angeles, United States of America Clayton, James Varian Medical Systems Security and Inspection Products, United States of

America Clemente, Gianluigi Johann Wolfgang Goethe-Universitaet, Germany Cline, David University of California, Los Angeles, United States of America Clough, Stephen Atomic Weapons Establishment, United Kingdom Cluggish, Brian Far-Tech, Inc., United States of America Cohen, Stanley Bira Systems, Inc., United States of America Coleman, Joshua Lawrence Berkeley National Laboratory, United States of America Collier, Paul European Organization for Nuclear Research, Switzerland Colton, Eugene U.S. Dept. of Energy, United States of America TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Comyn, Martin Conde, Manoel Argonne National Laboratory, United States of America Argonne National Laboratory Physics Division, United States of America Conway, Zachary University of California, Los Angeles, United States of America Cook, Alan Cook, David University of Nottingham, United Kingdom Corbett, Jeff Stanford Linear Accelerator Center Stanford Synchrotron Radiation Laboratory, United States of America Corlett, John Lawrence Berkeley National Laboratory, United States of America Cornelius, Susan Scientific Solutions, United States of America Cornelius, Wayne Scientific Solutions. United States of America Corsini, Roberto European Organization for Nuclear Research, Switzerland Cousineau, Sarah Oak Ridge National Laboratory Spallation Neutron Source, United States of America Cowan, Benjamin Tech-X Corporation, United States of America Craddock, Michael University of British Columbia & TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Oak Ridge National Laboratory Spallation Neutron Source, United States of Crofford, Mark America Crooks, Roy Black Laboratories, L.L.C., United States of America Cummings, Mary Anne Northern Illinois University, United States of America Cutler, Roy Oak Ridge National Laboratory Spallation Neutron Source, United States of America Northwestern University, United States of America Dabrowski, Anne Dallin, Les Canadian Light Source Inc. University of Saskatchewan, Canada Daly, Adeline Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Damerau, Heiko Gesellschaft f. Schwerionenforschung mbH Accelerator Physics Division, Germany Danilov, Viatcheslav Oak Ridge National Laboratory Spallation Neutron Source, United States of America Dauguet, Pascale Air Liquide, France Sincrotrone Trieste S.C.p.A. ELETTRA, Italy D'Auria, Gerardo Davidson, Ronald Princeton Plasma Physics Laboratory, United States of America Davino, Daniele Brookhaven National Laboratory, United States of America Davis, Kirk Thomas Jefferson National Accelerator Facility, United States of America Davis, Lynn Wah Chang, United States of America de Lira, Antonio Stanford Linear Accelerator Center, United States of America Lawrence Berkeley National Laboratory Center for Beam Physics, United States of De Santis, Stefano America Deacon, Lawrence Royal Holloway, University of London, United Kingdom DeBonis, David ZTEC Instruments, United States of America Thales Components Corporation, United States of America DeCastro, Armando Dechow, Douglas Tech-X Corporation, United States of America Decker, Glenn Argonne National Laboratory, United States of America Defrance, Christophe **BERGOZ** Instrumentation, France Dehnel - Particle Accelerator Components & Engineering, Inc., Canada Dehnel, Morgan Dehning, Bernd European Organization for Nuclear Research, Switzerland DeHope, William University of California, United States of America

Deibele, Craig Oak Ridge National Laboratory Spallation Neutron Source, United States of America Delayen, Jean Thomas Jefferson National Accelerator Facility, United States of America Den Hartog, Patric Argonne National Laboratory Advanced Photon Source, United States of America Deng, Jianjun Chinese Academy of Engineering Physics Institute of Fluid Physics, People's Republic of China Derbenev, Yaroslav Thomas Jefferson National Accelerator Facility, United States of America Di Monte, Nicholas Argonne National Laboratory Advanced Photon Source, United States of America DiCastro, Mario European Organization for Nuclear Research, Switzerland Dierker, Steven Brookhaven National Laboratory National Synchrotron Light Source, United States of America Forschungszentrum Julich GmbH Institut fur Kernphysik, Germany Dietrich, Juergen Dimitrov, Dimitre Tech-X Corporation, United States of America Brookhaven National Laboratory, United States of America Ding, Xiaoping Ding, Yuantao Stanford Linear Accelerator Center, United States of America Dixit, Tanuja Graduate University for Advanced Studies Department of Accelerator Science, Japan Doelling, Dirk ACCEL Instruments GmbH, Germany Doleans, Marc Michigan State University National Superconducting Cyclotron Laboratory, United States of America Dolgashev, Valery Stanford Linear Accelerator Center, United States of America Dooling, Jeffrey Argonne National Laboratory, United States of America Dorda, Ulrich European Organization for Nuclear Research, Switzerland Dorf, Mikhail Princeton Plasma Physics Laboratory, United States of America Douglas, David Thomas Jefferson National Accelerator Facility, United States of America Dowell, David Stanford Linear Accelerator Center, United States of America Downs, Henry Mega Industries, LLC, United States of America Dragt, Alex University of Maryland, United States of America Drees, Angelika Brookhaven National Laboratory, United States of America Drennan, Craig Fermi National Accelerator Laboratory Accelerator Division, United States of America Fermi National Accelerator Laboratory Accelerator Division, United States of Drozhdin, Alexandr America Duarte, Robert Lawrence Berkeley National Laboratory, United States of America Dunning, Michael University of California, Los Angeles, United States of America Duperrier, Romuald Commissariat a l'Energie Atomique Direction des Sciences de la Matiere, France Eberhardt, Marvin Communications & Power Industries Eimac Division, United States of America Edgecock, Thomas Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Ehrlichman, Michael Cornell University, United States of America Einfeld, Dieter Consorci Font de Llum Sincrotron - CELLS, Spain Ekdahl, Carl Los Alamos National Laboratory, United States of America University of New Mexico, United States of America Ellison, James Emanuele, Umberto Universita di Messina Gruppo Collegato di Messina, Italy Emery, Louis Argonne National Laboratory Advanced Photon Source, United States of America Emhofer, Stephan Siemens AG Medical Solutions Particle Therapy, Germany Emma, Paul Stanford Linear Accelerator Center, United States of America Emsley, Joseph Communications & Power Industries Eimac Division, United States of America England, Robert University of California, Los Angeles, United States of America Fermi National Accelerator Laboratory, United States of America Erdelyi, Bela Eremeev, Grigory Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education, United States of America Erickson, John New Affiliation Request Pending, Unknown Lund University National Electron Accelerator Laboratory for Synchrotron Eriksson, Mikael Radiation Research, Nuclear Physics and Accelerator Physics, Sweden Los Alamos National Laboratory, United States of America Espinoza, Audra

Evtushenko, Pavel Thomas Jefferson National Accelerator Facility, United States of America Eyberger, Cathy Argonne National Laboratory, United States of America Fan, Mingwu Huazhong University of Science and Technology, People's Republic of China University of California, Los Angeles, United States of America Fang, Fang Fang, Zhigao High Energy Accelerator Research Organization Accelerator Laboratory, Japan Farkhondeh, Manouchehr US Department of Energy Office of Nuclear Physics, United States of America Faucett, John Los Alamos National Laboratory LANSCE Division, United States of America Fazio, Michael Los Alamos National Laboratory, United States of America Fedotov, Alexei Brookhaven National Laboratory, United States of America Louisiana State University Center for Advanced Microstructure & Devices, United Fedurin, Mikhail States of America Feigerle, Charles University of Tennessee, United States of America Feldman, Donald University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Felice, Helene Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Feng, Bing University of Southern California, United States of America Feng, Guang Argonne National Laboratory Advanced Photon Source, United States of America Ferdinand, Robin Grand Accelerateur Nat. d'Ions Lourds, France Fernandez, Louis Los Alamos National Laboratory LANSCE Division, United States of America Fernandez-Hernando, Juan Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Fernqvist, Gunnar European Organization for Nuclear Research, Switzerland Ferracin, Paolo Lawrence Berkeley National Laboratory, United States of America Ferrari, Arnaud Uppsala University Angstrom Laboratory, Sweden Ferrario, Massimo Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Ficcadenti, Luca Tech-X Corporation, United States of America Fillmore, David Findlay, David Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Fiorito, Ralph University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Fischer, Philipp Johann Wolfgang Goethe-Universitaet, Germany Fischer, Wolfram Brookhaven National Laboratory, United States of America Fisher, Alan Stanford Linear Accelerator Center, United States of America Fitzgerald, Kelvin New Affiliation Request Pending, Unknown Fiuza, Karen Universidade Federal do Rio Grande do Sul Istituto de Fisica UFRGS, Brazil Flanz, Jay Massachusetts General Hospital Francis H Burr Proton Therapy Center, United States of America Flavell, Wendy The University of Manchester School of Physics and Astronomy, United Kingdom Fliller, Raymond Fermi National Accelerator Laboratory, United States of America Forchi', Vincenzo Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Franceskin, Mojca Instrumentation Technologies, Slovenia Franchetti, Giuliano Gesellschaft f. Schwerionenforschung mbH High Current Beam Division, Germany Franklin, Wilbur Massachusetts Institute of Technology Bates Linear Accelerator Center, United States of America University of California, Los Angeles, United States of America Frederico, Joel Fresquez, Matthew Los Alamos National Laboratory LANSCE Division, United States of America Friedman, Alex University of California, United States of America Friesel, Dennis PartTec, Ltd., United States of America Frigola, Pedro University of California, Los Angeles, United States of America Frisch, Josef Stanford Linear Accelerator Center, United States of America Froehlich, Lars Deutsches Elektronen-Synchrotron, Germany Fujita, Kazuhiro Hokkaido University, Japan University of California, Los Angeles, United States of America Fukasawa, Atsushi Fukuda, Masafumi National Institute of Radiological Sciences Division of Accelerator Physics and Engineering, Japan

Fukui, Yasuo University of California, Los Angeles, United States of America Furman, Miguel Lawrence Berkelev National Laboratory Accelerator and Fusion Research, United States of America Furukawa, Kazuro High Energy Accelerator Research Organization, Japan Argonne National Laboratory Physics Division, United States of America Gai, Wei Galambos, John Oak Ridge National Laboratory Spallation Neutron Source, United States of America Gallegos, Flovd Los Alamos National Laboratory LANSCE Division, United States of America Galloy, Michael Tech-X Corporation, United States of America Chinese Academy of Engineering Physics Institute of Applied Electronics, People's Gan, Kongyin Republic of China Argonne National Laboratory, United States of America Gao, Feng Gardner, Chris Brookhaven National Laboratory, United States of America TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Gardner, Philip Garnett, Robert Los Alamos National Laboratory, United States of America Gatti, Giancarlo Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Geddes, Cameron Lawrence Berkeley National Laboratory, United States of America Thomas Jefferson National Accelerator Facility, United States of America Geng, Rong-Li Gensch, Ulrich Deutsches Elektronensynchrotron DESY at Zeuthen, Germany Gerigk, Frank European Organization for Nuclear Research, Switzerland Gholizadeh, Reza University of Southern California, United States of America Gibson, David University of California, United States of America Gierman, Stephen Stanford Linear Accelerator Center, United States of America Gilpatrick, J. Los Alamos National Laboratory, United States of America Gilson, Erik Princeton Plasma Physics Laboratory, United States of America Giovannozzi, Massimo European Organization for Nuclear Research, Switzerland Glasman, Christopher Cockcroft Institute The University of Manchester, United Kingdom Glavare, Rune ScandiNova Systems AB, Sweden Gluskin, Efim Argonne National Laboratory Advanced Photon Source, United States of America Gold, Steven Naval Research Laboratory Plasma Physics Division, United States of America Golge, Serkan Private Address, United States of America Gollwitzer, Keith Fermi National Accelerator Laboratory, United States of America Gonin, Ivan Fermi National Accelerator Laboratory, United States of America Gonsalves, Anthony Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Los Alamos National Laboratory LANSCE Division, United States of America Gonzales, Fermin Goodzeit, Carl Advanced Magnet Lab., Inc. United States of America Gorelov, Dmitry Michigan State University National Superconducting Cyclotron Laboratory, United States of America Gouard, Philippe Commissariat a l'Energie Atomique, France Goudket, Philippe Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Gourlay, Stephen Lawrence Berkeley National Laboratory, United States of America Gowa, Tomoko Waseda University Advanced Research Institute for Science and Engineering, Japan Grames, Joseph Thomas Jefferson National Accelerator Facility, United States of America Grand, Pierre TechSource. Inc. United States of America Communications & Power Industries, Inc., United States of America Grant, Thomas Grassellino, Anna University of Pennsylvania, United States of America Graves, William Massachusetts Institute of Technology, United States of America Grelick, Arthur Argonne National Laboratory, United States of America Grill, Robert PLANSEE SE Technology Center, Austria Grimm, Oliver Deutsches Elektronen-Synchrotron MPY, Germany Grimm, Terry L. Niowave, Inc., United States of America Grimmer, John Argonne National Laboratory Advanced Photon Source, United States of America Grubert, Liz Far-Tech, Inc., United States of America Gruchalla, Michael Los Alamos National Laboratory LANSCE Division, United States of America

Gschwendtner, Edda University of Geneva, Switzerland Los Alamos National Laboratory AOT Division, United States of America Gulley, Mark Guo, Jiquan Stanford Linear Accelerator Center Next Linear Collider Dept., United States of America Brookhaven National Laboratory National Synchrotron Light Source, United States Guo, Weiming of America Oak Ridge National Laboratory Spallation Neutron Source, United States of Gurd, David America Guy, Frank Linac Systems, United States of America Haber, Irving University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Habermann, Thomas Communications & Power Industries, Inc., United States of America Hahn, Harald Brookhaven National Laboratory, United States of America Haimson, Jacob Haimson Research Corporation, United States of America Hamm, Robert Private Address, United States of America Hampel, Robert Institut fuer Theorie Elektromagnetischer Felder Technische Universitaet Darmstadt, Germany Han, Baoxi Oak Ridge National Laboratory Spallation Neutron Source, United States of America Hanna, Samy Microwave Innovative Accelerators, United States of America Hao, Yue Brookhaven National Laboratory, United States of America Los Alamos National Laboratory, United States of America Hardage, Sherry Hardek, Thomas Oak Ridge National Laboratory Spallation Neutron Source, United States of America Harden, Trov Los Alamos National Laboratory, United States of America Fermi National Accelerator Laboratory Technical Division, United States of Harding, David America Argonne National Laboratory Advanced Photon Source, United States of America Harkay, Katherine Harris, John Lawrence Livermore National Laboratory, United States of America Hart, Terrence Illinois Institute of Technology, United States of America Hartemann, Fred Lawrence Livermore National Laboratory National Ignition Facility Programs Directorate, United States of America Hartin, Anthony John Adams Institute, United Kingdom Hasegawa, Kazuo Japan Atomic Energy Agency, Japan Hayashi, Kenichi Toshiba Electron Tubes & Devices Co., Ltd, Japan Los Alamos National Laboratory LANSCE Division, United States of America Havden, David Brookhaven National Laboratory, United States of America He, Ping Hegelich, Bjorn Los Alamos National Laboratory, United States of America European Organization for Nuclear Research, Switzerland Heikkila, Antti Heinemann, Klaus University of New Mexico, United States of America Hemsing, Erik University of California, Los Angeles, United States of America Henderson, David Los Alamos National Laboratory LANSCE Division, United States of America Henderson, Stuart Oak Ridge National Laboratory Spallation Neutron Source, United States of America Lawrence Berkeley National Laboratory, United States of America Henestroza, Enrique Hensley, Steve Eden Cryogenics, LLC, United States of America Herman, Michael Mayo Clinic, United States of America Hess, Mark Indiana University Cyclotron Facility, United States of America Hicks, William Thomas Jefferson National Accelerator Facility, United States of America Hill, Jeffrey Los Alamos National Laboratory AOT Division, United States of America Stanford Linear Accelerator Center, United States of America Himel, Thomas Hoa, Christine European Organization for Nuclear Research, Switzerland Hock, Kai Cockcroft Institute, United Kingdom Hoekstra, Geoff New Affiliation Request Pending, Unknown Deutsches Elektronen-Synchrotron MPY, Germany Hoffmann, Markus Deutsches Elektronen-Synchrotron, Germany Hoffmann, Matthias Hoffstaetter, Georg Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education, United States of America Thomas Jefferson National Accelerator Facility, United States of America Hofler, Alicia

Hofmann, Ingo Gesellschaft f. Schwerionenforschung mbH, Germany Hogan, Mark Stanford Linear Accelerator Center, United States of America Holder, David Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Holladay, Gary Los Alamos National Laboratory AOT Division, United States of America Holloway, Michael University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Holmes, Jeffrey Oak Ridge National Laboratory Spallation Neutron Source, United States of America Holmes, Stephen Fermi National Accelerator Laboratory, United States of America Holtkamp, Norbert ITER International Team, France Holzscheiter, Michael University of New Mexico, United States of America Horak, Charlie Oak Ridge National Laboratory Spallation Neutron Source, United States of America Argonne National Laboratory Advanced Photon Source, United States of America Horan, Douglas Hotchi, Hideaki Japan Proton Accelerator Research Complex (J-PARC) Japan Atomic Energy Agency, Japan Houck, Timothy Lawrence Livermore National Laboratory University of California, United States of America Hu, Kuo Hwa National Synchrotron Radiation Research Center, Taiwan Hu, Martin Fermi National Accelerator Laboratory Accelerator Division, United States of America Huang, Chengkun University of California, Los Angeles, United States of America Illinois Institute of Technology, United States of America Huang, Dazhang Huang, Gang Tsinghua University in Beijing, People's Republic of China Huang, Haixin Brookhaven National Laboratory, United States of America Pohang University of Science and Technology, Republic of Korea Huang, Jung Yun Huang, Wenhui Tsinghua University in Beijing Accelerator Laboratory, People's Republic of China Huang, Xiaobiao Stanford Linear Accelerator Center Stanford Synchrotron Radiation Laboratory, United States of America Huang, Yen-Chieh National Tsing Hua University, Taiwan Hughes, Martin Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Hughes, Thomas Voss Scientific, United States of America Oak Ridge National Laboratory Spallation Neutron Source, United States of Hunter, Ted America Los Alamos National Laboratory LANSCE Division, United States of America Hurd, Alan Huttel, Erhard Forschungszentrum Karlsruhe GmbH Institute for Synchrotron Radiation, Germany Thomas Jefferson National Accelerator Facility, United States of America Hutton, Andrew Hwang, Ching-Shiang National Synchrotron Radiation Research Center, Taiwan Hwang, Woon Ha Pohang Accelerator Laboratory, Republic of Korea Ieiri. Takao High Energy Accelerator Research Organization, Japan Toshiba America Electronic Components, Inc., United States of America **IIZUKA, MINORU** Ikeda, Hitomi High Energy Accelerator Research Organization, Japan Inagaki, Takahiro National Institute for Fusion Science, Japan Irie, Yoshiro High Energy Accelerator Research Organization, Japan Ischebeck, Rasmus Stanford Linear Accelerator Center, United States of America Ishida, Taku High Energy Accelerator Research Organization, Japan Ivanyushenkov, Yury Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Iwashita, Taiki High Energy Accelerator Research Organization, Japan Iwashita, Yoshihisa Kvoto University Institute for Chemical Research, Japan The Australian Synchrotron Project, Australia Jackson, Alan Jackson, Frank Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Jacobs, Ken University of Wisconsin-Madison Synchrotron Radiation Center, United States of America Janssen, Dietmar Research Centre Dresden Rossendorf, Germany Jansson, Andreas Fermi National Accelerator Laboratory Accelerator Division, United States of America University of Science and Technology of China National Synchrotron Radiation Jia, Qika

Jing, Chunguang Johns, Glen Johnson, Brant Johnson, David Johnson, Kenneth Johnson, Rolland Johnstone, Carol Jones, Bryan Jones, Frederick Jones, Kevin Jones, Owain Jones, Roger Joshi, Chan Kaganovich, Dmitri Kaganovich, Igor Kallos, Efthymios Kamerdzhiev, Vsevolod Kamiya, Yoshio Kamps, Thorsten Kan, Koichi Kanesue, Takeshi Kang, Heung-Sik Kang, Yoon Karcnik, Tomaz Kashikhin, Vadim Kashikhin, Vladimir Kashiwagi, Shigeru Kasinski, Krzysztof Kato, Takashi Katoh, Masahiro Katsouleas, Tom Kayran, Dmitry Kazakov, Sergey Kazarinov, Nikolay Keil, Eberhard Keil, Joachim Kelez, Nicholas Keller, Roderich Kelley, John Kephart, Robert Kersevan, Roberto Kershaw, Keith Kerstiens, Debora Keung, Justin Kewisch, Jorg Khabiboulline, Timergali Khan, Shaukat Khodyachykh, Sergiy Kikuchi, Takashi Kim, Eun-San Kim, Han-Sung

Laboratory, People's Republic of China Argonne National Laboratory, United States of America Los Alamos National Laboratory AOT Division, United States of America American Physical Society, United States of America Fermi National Accelerator Laboratory, United States of America Los Alamos National Laboratory, United States of America Muons, Inc, United States of America Fermi National Accelerator Laboratory, United States of America Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Los Alamos National Laboratory, United States of America European Organization for Nuclear Research, Switzerland Cockcroft Institute The University of Manchester, United Kingdom University of California, Los Angeles, United States of America Naval Research Laboratory Plasma Physics Division, United States of America Princeton Plasma Physics Laboratory, United States of America University of Southern California, United States of America Fermi National Accelerator Laboratory Accelerator Division, United States of America University of Tokyo, Japan Berliner Elektronenspeichering-Gesellschaft fur Synchrotronstrahlung m.b.H., Germany Osaka University The Institute of Scientific and Industrial Research, Japan Kyushu University, Japan Pohang Accelerator Laboratory, Republic of Korea Oak Ridge National Laboratory Spallation Neutron Source, United States of America Instrumentation Technologies, Slovenia Fermi National Accelerator Laboratory, United States of America Fermi National Accelerator Laboratory, United States of America Osaka University The Institute of Scientific and Industrial Research, Japan European Organization for Nuclear Research, Switzerland Nikken Sekkei Ltd., Japan UVSOR Facility Institute for Molecular Science, Japan University of Southern California, United States of America Brookhaven National Laboratory, United States of America High Energy Accelerator Research Organization Accelerator Laboratory, Japan Joint Institute for Nuclear Research, Russia European Organization for Nuclear Research, Switzerland Deutsches Elektronen-Synchrotron MPY, Germany Lawrence Berkeley National Laboratory, United States of America Los Alamos National Laboratory AOT Division, United States of America Los Alamos National Laboratory, United States of America Fermi National Accelerator Laboratory Technical Division, United States of America Oak Ridge National Laboratory Spallation Neutron Source, United States of America European Organization for Nuclear Research, Switzerland Los Alamos National Laboratory LANSCE Division, United States of America University of Pennsylvania, United States of America Brookhaven National Laboratory, United States of America Fermi National Accelerator Laboratory Technical Division, United States of America Hamburg University Institut fuer Experimentalphysik, Germany Deutsches Elektronensynchrotron DESY at Zeuthen, Germany Utsunomiya University, Japan Kyungpook National University, Republic of Korea Korea Atomic Energy Research Institute, Republic of Korea

Kim, Jin-Soo Kim, Kwang-Je Kim, Kyung-Ryul Kim, Sang-Ho Kim, Suk Hong Kim, Sung-Chul Kimber, Andrew Kirby, Neil Kireeff Covo, Michel Kirk, Harold Kishek, Rami Kite, Pamela Klaffky, Roger Klein, Hans-Udo Klein, Horst Ko, In Soo Kobayashi, Takashi Kobayashi, Yukinori Kondoh, Takafumi Kondrashev, Sergei Konkashbaev, Isak Kopp, Sacha Korenev, Sergey Kornilov, Vladimir Koscielniak, Shane Koseki, Tadashi Kostin, Mikhail Kostromin, Sergey Kosuga, Takeshi Kourbanis, Ioanis Kovalchuk, Alexey Kramer, Dieter Kramer, Thomas Krawczyk, Frank Kreisler, Michael Krejcik, Patrick Kreutzkamp, Jens Krinsky, Samuel Krischel, Detlef Kruecker, Dirk Kubyshin, Yuri Kumada, Masayuki Kuno, Yoshitaka Kurennoy, Sergey Kuroda, Ryunosuke Kurokawa, Shin-ichi Kurzydlo, John Kustom, Robert Kuzin, Maxim Kwon, Sungil

Far-Tech, Inc., United States of America Argonne National Laboratory Advanced Photon Source, United States of America Pohang Accelerator Laboratory, Republic of Korea Oak Ridge National Laboratory Spallation Neutron Source, United States of America Argonne National Laboratory Advanced Photon Source, United States of America Pohang Accelerator Laboratory, Republic of Korea Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Stanford Linear Accelerator Center, United States of America Lawrence Berkeley National Laboratory, United States of America Brookhaven National Laboratory, United States of America University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Oak Ridge National Laboratory Spallation Neutron Source, United States of America United States Department of Energy Basic Energy Sciences, United States of America ACCEL Instruments GmbH, Germany Johann Wolfgang Goethe-Universitaet, Germany Pohang University of Science and Technology, Republic of Korea High Energy Accelerator Research Organization, Japan High Energy Accelerator Research Organization, Japan Osaka University The Institute of Scientific and Industrial Research, Japan Institute of Theoretical and Experimental Physics, Russia Argonne National Laboratory, United States of America The University of Texas at Austin, United States of America Muons, Inc, United States of America Gesellschaft f. Schwerionenforschung mbH High Current Beam Division, Germany TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada High Energy Accelerator Research Organization Accelerator Laboratory, Japan Michigan State University National Superconducting Cyclotron Laboratory, United States of America Joint Institute for Nuclear Research, Russia SCETI K.K., Japan Fermi National Accelerator Laboratory, United States of America National Academy of Sciences of Ukraine Institute for Nuclear Research, Ukraine Gesellschaft f. Schwerionenforschung mbH, Germany European Organization for Nuclear Research, Switzerland Los Alamos National Laboratory LANSCE Division, United States of America Lawrence Livermore National Laboratory, United States of America Stanford Linear Accelerator Center, United States of America New Affiliation Request Pending, Unknown Brookhaven National Laboratory National Synchrotron Light Source, United States of America ACCEL Instruments GmbH, Germany Deutsches Elektronen-Synchrotron, Germany Universitat Politecnica de Catalunya Institut de Techniques Energetiques, Spain National Institute of Radiological Sciences Division of Accelerator Physics and Engineering, Japan Osaka University, Japan Los Alamos National Laboratory, United States of America National Institute of Advanced Industrial Science & Technology Research Institute of Instrumentation Frontier, Japan High Energy Accelerator Research Organization Accelerator Laboratory, Japan Toshiba Corporation, Japan Argonne National Laboratory, United States of America Russian Academy of Sciences The Budker Institute of Nuclear Physics, Russia Los Alamos National Laboratory LANSCE Division, United States of America

La Civita, Daniele Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Lackey, James Fermi National Accelerator Laboratory Accelerator Division, United States of America Lagniel, Jean-Michel Centre d'Etudes de Bruveres-le-Chatel, France Lanfranco, Giobatta Fermi National Accelerator Laboratory, United States of America Lanzone, Sara Naples University Federico II, Italy Yale University Beam Physics Laboratory, United States of America LaPointe, Michael Latina, Andrea European Organization for Nuclear Research, Switzerland Launey, Daren Louisiana State University Center for Advanced Microstructure & Devices, United States of America Laverty, Michael TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Laxdal, Robert TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Le Dem, Gwenal Grand Accelerateur Nat. d'Ions Lourds, France Fermi National Accelerator Laboratory, United States of America Lebrun, Paul Lederer, Sven Deutsches Elektronen-Synchrotron, Germany Lee, An-ping National Synchrotron Radiation Research Center, Taiwan Lee, Shyh-Yuan Indiana University Cyclotron Facility, United States of America Leemans, Wim Lawrence Berkeley National Laboratory, United States of America University of Wisconsin-Madison Synchrotron Radiation Center, United States of Legg, Robert America U.S. Department of Energy, United States of America Len, L.K. Lenci, Stephan Communications & Power Industries, Inc., United States of America New Affiliation Request Pending, Unknown Leopold, John Science and Technology Facilites Council Rutherford Appleton Laboratory, United Letchford, Alan Kingdom Lewis. Gareth New Affiliation Request Pending, Unknown Leyh, Greg Stanford Linear Accelerator Center, United States of America Li, Derun Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Li, Jianjian Fermi National Accelerator Laboratory, United States of America Li, Jingyi Free Electron Laser Laboratory Duke University, United States of America Li, Renkai Tsinghua University in Beijing Accelerator Laboratory, People's Republic of China Li, Rui Thomas Jefferson National Accelerator Facility, United States of America Li, Wei-min University of Science and Technology of China National Synchrotron Radiation Laboratory, People's Republic of China Cornell University Department of Physics, United States of America Li, Yulin Stanford Linear Accelerator Center, United States of America Li, Zenghai Liaw, Chong-Jer Brookhaven National Laboratory, United States of America Columbia University Howard Hughes Medical Institute, United States of America Lidestri, Joseph Cornell University Cornell Laboratory for Accelerator-Based Sciences and Liepe, Matthias Education, United States of America Lilje, Lutz Deutsches Elektronen-Synchrotron MPY, Germany Liljeby, Leif Stockholm University Manne Siegbahn Laboratory, Sweden Lill, Robert Argonne National Laboratory Advanced Photon Source, United States of America Brookhaven National Laboratory, United States of America Lin, Fanglei Lin, Ray-Lee National Cheng Kung University, Taiwan Litvinenko, Vladimir Free Electron Laser Laboratory Duke University, United States of America Liu, Chen-Yao National Synchrotron Radiation Research Center, Taiwan Liu, Chuyu Peking University, People's Republic of China Liu, Shengguang High Energy Accelerator Research Organization, Japan Argonne National Laboratory, United States of America Liu, Wanming Liu, XianGhong Cornell University Department of Physics, United States of America Liu, Zu-ping University of Science and Technology of China National Synchrotron Radiation Laboratory, People's Republic of China Loehl, Florian Deutsches Elektronen-Synchrotron, Germany Loew, Tim Lawrence Berkeley National Laboratory, United States of America Long, Jidong Argonne National Laboratory, United States of America Loos, Henrik Stanford Linear Accelerator Center, United States of America Lopez, Roberta Los Alamos National Laboratory, United States of America

Lorbeer, Bastian Deutsches Elektronen-Synchrotron, Germany Lovato, Janet Los Alamos National Laboratory AOT Division, United States of America University of California, Los Angeles, United States of America Lu, Wei Luedemann, Gary Los Alamos National Laboratory, United States of America Lumpkin, Alex Argonne Accelerator Institute Argonne National Laboratory, United States of America Lawrence Berkeley National Laboratory, United States of America Lund. Steven Brookhaven National Laboratory, United States of America Luo, Yun Lyapin, Alexey University College London, United Kingdom Los Alamos National Laboratory LANSCE Division, United States of America Lyles, John Los Alamos National Laboratory, United States of America Lynch, Michael Lyneis, Claude Lawrence Berkeley National Laboratory, United States of America Ma, Hengjie Oak Ridge National Laboratory Spallation Neutron Source, United States of America Ma, Li Chinese Academy of Sciences Institute of High Energy Physics, People's Republic of China Macek, Robert TechSource, Inc, United States of America Machida, Shinji Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom MacKinnon, Barry New Affiliation Request Pending, Unknown Maggiore, Mario Istituto Nazionale di Fisica Nucleare Laboratori Nazionali del Sud, Italy Brookhaven National Laboratory, United States of America Mahler, George Brookhaven National Laboratory, United States of America Makdisi, Yousef Malamud, Ernie University of Nevada, Reno, United States of America Malka, Victor Laboratoire d'Optique Appliquee, France Mangano, Michelangelo European Organization for Nuclear Research, Switzerland Manini, Paolo SAES Getters S.p.A., Italy Marcellini, Fabio Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Marchetto, Marco TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Marhauser, Frank Thomas Jefferson Accelerator Laboratory, United States of America RAFAEL, Israel Markovits, Meir Marks, Steve Lawrence Berkeley National Laboratory Advanced Light Source, United States of America Marroquin, Pilar Los Alamos National Laboratory AOT Division, United States of America Marsh, Roark Massachusetts Institute of Technology Plasma Science and Fusion Center, United States of America Martin, Ian Diamond Light Source Ltd, United Kingdom Los Alamos National Laboratory LANSCE Division, United States of America Martinez. Derwin Los Alamos National Laboratory, United States of America Martinez, Evangeline Martinez, Felix Los Alamos National Laboratory, United States of America Martinez, Linda Los Alamos National Laboratory, United States of America Martinez, Martin Los Alamos National Laboratory LANSCE Division, United States of America Martins, Marcos Sao Paulo University Institute of Physics - Department of Experimental Physics, Brazil Deutsches Elektronen-Synchrotron MPY, Germany Marx, Michaela Mastorides, Themis Stanford Linear Accelerator Center, United States of America Masunov, Eduard Moscow Engineering Physics Institute State University, Russia Mauri, Alain Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Maxwell, Timothy Northern Illinois University, United States of America Illinois Institute of Technology, United States of America McCarron, Daniel McCarthy, Michael Oak Ridge National Laboratory Spallation Neutron Source, United States of America McCrady, Rodney Los Alamos National Laboratory, United States of America Fermi National Accelerator Laboratory Accelerator Division, United States of McCrory, Elliott America McDonell, Richard National Instruments Switzerland, Switzerland McGee, Mike Fermi National Accelerator Laboratory, United States of America Mcguinness, Christopher Stanford Linear Accelerator Center, United States of America McIntosh, Peter Stanford Linear Accelerator Center, United States of America

McInturff, Alfred Lawrence Berkeley National Laboratory, United States of America McIntyre, Peter Texas A&M University, United States of America Science and Technology Facilites Council Daresbury Laboratory, United Kingdom McKenzie, Julian McMichael, Gerald Argonne National Laboratory, United States of America McMillen, Mark Los Alamos National Laboratory AOT Division, United States of America VAT Inc., United States of America McPheeters, Bill New Affiliation Request Pending, Unknown Meads, Philip Meddahi, Malika European Organization for Nuclear Research, Switzerland Meng, Wuzheng Brookhaven National Laboratory, United States of America Thomas Jefferson National Accelerator Facility, United States of America Merminga, Lia Messmer, Peter Tech-X Corporation, United States of America Metral, Elias European Organization for Nuclear Research, Switzerland Meyer, Fred Oak Ridge National Laboratory, United States of America Istituto Nazionale di Fisica Nucleare Laboratorio Acceleratori e Superconduttivita Michelato, Paolo Applicata, Italy Michizono, Shinichiro High Energy Accelerator Research Organization, Japan Middendorf, Mark Argonne National Laboratory, United States of America Cornell University Department of Physics, United States of America Mikhailichenko, Alexander Free Electron Laser Laboratory Duke University, United States of America Mikhailov, Stepan Milardi, Catia Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Miller. Sandi TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada New Affiliation Request Pending, Unknown Min, Misun Mishra, Shekhar Fermi National Accelerator Laboratory Technical Division, United States of America Missiaen, Dominique European Organization for Nuclear Research, Switzerland Mitani, Tetsuji Hitachi Ltd., Japan Mitchell, Chad University of Maryland, United States of America Miyadera, Haruo Los Alamos National Laboratory LANSCE Division, United States of America Miyamoto, Ryoichi The University of Texas at Austin, United States of America Mize, Jeffery Oak Ridge National Laboratory, United States of America Møller, Søren Danfysik A/S, Denmark Molloy, Stephen Stanford Linear Accelerator Center, United States of America Montag, Christoph Brookhaven National Laboratory, United States of America Montgomery, Eric University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Moody, Josh University of California, Los Angeles, United States of America Moody, Nathan University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Moog, Elizabeth Argonne National Laboratory, United States of America Moore, Craig Fermi National Accelerator Laboratory, United States of America Moore. Ronald Fermi National Accelerator Laboratory, United States of America Mori, Hitoshi Nichicon (Kusatsu) Corporation, Japan Mori, Warren University of California, Los Angeles, United States of America Moritz, Gebhard Gesellschaft f. Schwerionenforschung mbH, Germany Morozumi, Yuichi High Energy Accelerator Research Organization, Japan Morris, Mark ZTEC Instruments, United States of America Morrison, Leonard Argonne National Laboratory Advanced Photon Source, United States of America e2v, United States of America Morton, Gregory Mueller, Norbert Johann Wolfgang Goethe-Universitaet, Germany University of Southern California, United States of America Muggli, Patric Institut fuer Theorie Elektromagnetischer Felder Technische Universitaet Muller, Wolfgang Darmstadt, Germany Mullowney, Paul Tech-X Corporation, United States of America RadiaBeam Technologies, United States of America Murokh, Alex Musardo, Marco Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Mustapha, Brahim Argonne National Laboratory Physics Division, United States of America Musumeci, Pietro Rome University La Sapienza, Italy Nadji, Amor Synchrotron Soleil, France Nagaitsev, Sergei Fermi National Accelerator Laboratory, United States of America

Nagaoka, Ryutaro Synchrotron Soleil, France Nakamura, Eiji High Energy Accelerator Research Organization, Japan Lawrence Berkeley National Laboratory, United States of America Nakamura, Kei Nam, Sang Pohang Accelerator Laboratory, Republic of Korea Namkung, Won Pohang Accelerator Laboratory, Republic of Korea Napoly, Olivier Commissariat a l'Energie Atomique Direction des Sciences de la Matiere, France Nash. Boaz Brookhaven National Laboratory, United States of America Nath, Subrata Los Alamos National Laboratory, United States of America Nathawat, Rashi University of Rajasthan Thin Film and Material Science Laboratory, India University of Tokyo Nuclear Engineering Research Laboratory, Japan Natsui, Takuya RAFAEL, Israel Navon, Itamar Neil, George Thomas Jefferson National Accelerator Facility, United States of America Nelson, Scott University of California, United States of America Nelson, Tony Oak Ridge National Laboratory, United States of America Neuman, Charles Private Address, United States of America Newsham, David Muons, Inc, United States of America Stanford Linear Accelerator Center, United States of America Nguyen, Minh Ni, Pavel Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Niedziela, Jennifer Brookhaven National Laboratory, United States of America Nielsen, Kurt Los Alamos National Laboratory, United States of America Nieter, Chet Tech-X Corporation, United States of America Nishimura, Hiroshi Lawrence Berkeley National Laboratory, United States of America Northern Illinois University, United States of America Nissen, Edward Noble, Robert Stanford Linear Accelerator Center, United States of America Noda, Akira Kvoto University Institute for Chemical Research, Japan Nolte, Richard Air Products & Chemicals, Inc., United States of America Argonne National Laboratory, United States of America Norem, Jim North, Matt Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Norum, Eric Argonne National Laboratory Advanced Photon Source, United States of America Novokhatski, Alexander Stanford Linear Accelerator Center, United States of America Nunes, Roger Universidade Federal do Rio Grande do Sul Istituto de Fisica UFRGS, Brazil Nyman, Jonas ScandiNova Systems AB, Sweden Hitachi High-Technologies Corp., Japan Ogawa, Tatsuo O'Hara, James Los Alamos National Laboratory AOT Division, United States of America Ohgaki, Hideaki Kyoto University Institute for Advanced Energy, Japan Ohmi, Kazuhito High Energy Accelerator Research Organization, Japan High Energy Accelerator Research Organization, Japan Ohsawa, Satoshi High Energy Accelerator Research Organization Accelerator Laboratory, Japan Oide, Katsunobu Okamura, Masahiro Brookhaven National Laboratory, United States of America Olivas, Eric Los Alamos National Laboratory, United States of America Olivas, Felix Los Alamos National Laboratory LANSCE Division, United States of America Olsen, Kenneth Linear Collider Forum of America, United States of America Omet, Carsten Gesellschaft f. Schwerionenforschung mbH Accelerator Physics Division, Germany Orris, Darryl Fermi National Accelerator Laboratory, United States of America O'Shea, Brendan University of California, Los Angeles, United States of America University Maryland, United States of America O'Shea, Patrick Ostenfeld, Christopher Danfysik A/S, Denmark Ostroumov, Peter Argonne National Laboratory Physics Division, United States of America Cornell University Department of Physics, United States of America Ouzounov, Dimitre University of Southern California, United States of America Oz, Erdem Ozaki, Norihiko Linear Collider Forum of Japan, Japan Ozaki, Satoshi Brookhaven National Laboratory, United States of America Fermi National Accelerator Laboratory Technical Division, United States of Ozelis, Joseph America Padamsee, Hasan Cornell University, United States of America Istituto Nazionale di Fisica Nucleare Laboratorio Acceleratori e Superconduttivita Pagani, Carlo Applicata, Italy

Pai, Chien Brookhaven National Laboratory, United States of America Pak, Art University of California, Los Angeles, United States of America Universidade Federal do Rio Grande do Sul Istituto de Fisica UFRGS, Brazil Pakter, Renato Particle Accelerator Consultants, LLC, United States of America Palmer, Dennis Palmer, Mark Cornell University Laboratory for Elementary-Particle Physics, United States of America Palmer, Robert Brookhaven National Laboratory, United States of America Michigan State University National Superconducting Cyclotron Laboratory, United Pang, Greg States of America Papadopoulos, Christos University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Pappas, Chris Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Pardo, Richard Argonne National Laboratory, United States of America Parent, Douglas Communications & Power Industries, Inc., United States of America Indiana University Cyclotron Facility, United States of America Park, Chong Shik Parker, Brett Brookhaven National Laboratory, United States of America Partridge, Edward Los Alamos National Laboratory LANSCE Division, United States of America Pasotti, Cristina Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Laboratoire de physique subatomique et de cosmologie CNRS-IN2P3, France Pasternak, Jaroslaw Pastre, Jean-Luc **THALES** Communications, France Paul, Kevin Tech-X Corporation, United States of America Commissariat a l'Energie Atomique Direction des Sciences de la Matiere, France Peauger, Franck Brookhaven National Laboratory, United States of America Peggs, Steve Penn, Gregory Lawrence Berkeley National Laboratory Center for Beam Physics, United States of America Science Applications International Corporation, United States of America Petillo, John Petit-Jean-Genaz, Christine European Organization for Nuclear Research, Switzerland Petzenhauser, Isfried Gesellschaft f. Schwerionenforschung mbH, Germany Piazza, Leandro Istituto Nazionale di Fisica Nucleare Laboratori Nazionali del Sud, Italy Pieck, Martin Los Alamos National Laboratory AOT Division, United States of America Pierini, Paolo Istituto Nazionale di Fisica Nucleare Laboratorio Acceleratori e Superconduttivita Applicata, Italy Pietryla, Anthony Argonne National Laboratory Advanced Photon Source, United States of America Pillai, Chandra Los Alamos National Laboratory LANSCE Division, United States of America Pinayev, Igor Brookhaven National Laboratory, United States of America Piot, Philippe Northern Illinois University, United States of America Piquet, Olivier Commissariat a l'Energie Atomique Direction des Sciences de la Matiere, France Pischalnikov, Yuriy Fermi National Accelerator Laboratory Technical Division, United States of America Pivi, Mauro Stanford Linear Accelerator Center, United States of America Plateau, Guillaume Lawrence Berkeley National Laboratory, United States of America Plawski, Tomasz Thomas Jefferson National Accelerator Facility, United States of America Plettner, Tomas Stanford University, United States of America Plostinar, Dan Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Plum, Michael Oak Ridge National Laboratory Spallation Neutron Source, United States of America Podlech, Holger Johann Wolfgang Goethe-Universitaet, Germany Podobedov, Boris Brookhaven National Laboratory National Synchrotron Light Source, United States of America Thomas Jefferson National Accelerator Facility, United States of America Poelker, Matt Oak Ridge National Laboratory Spallation Neutron Source, United States of Pogge, James America Lawrence Berkeley National Laboratory, United States of America Pogorelov, Ilya Pogue, Nathaniel Texas A&M University, United States of America Poirier, Freddy Royal Holloway, University of London, United Kingdom Oak Ridge National Laboratory Spallation Neutron Source, United States of Polisetti, Anil America Poncet, Alain European Organization for Nuclear Research, Switzerland

Pont, Montserrat Forschungszentrum Karlsruhe GmbH Institute for Synchrotron Radiation, Germany Poole, Brian University of California, United States of America Poole, John European Organization for Nuclear Research, Switzerland Popielarski, John Michigan State University National Superconducting Cyclotron Laboratory, United States of America Free Electron Laser Laboratory Duke University, United States of America Popov, Victor Lawrence Berkeley National Laboratory Advanced Light Source, United States of Portmann, Gregory America Potter, James JP Accelerator Works, United States of America New Affiliation Request Pending, Unknown Potts, Robert Power, John Los Alamos National Laboratory, United States of America Power, John Argonne National Laboratory, United States of America Pozdeyev, Eduard Brookhaven National Laboratory, United States of America Pozimski, Jurgen Imperial College of Science and Technology Department of Physics, United Kingdom Prat, Eduard Deutsches Elektronen-Synchrotron MPY, Germany Fermi National Accelerator Laboratory, United States of America Prebys, Eric Prestemon, Soren Lawrence Berkeley National Laboratory, United States of America Kenneth R. Prestwich Consulting, United States of America Prestwich, Kenneth Prior, Christopher Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Proch, Dieter Deutsches Elektronen-Synchrotron, Germany Los Alamos National Laboratory LANSCE Division, United States of America Prokop, Mark Fermi National Accelerator Laboratory Accelerator Division, United States of Prost, Lionel America Przygoda, Konrad Technical University of Lodz, Poland Ptitsyn, Vadim Brookhaven National Laboratory, United States of America Pusterla, Modesto Univ. degli Studi di Padova, Italy Qiang, Ji Lawrence Berkeley National Laboratory Center for Beam Physics, United States of America Princeton Plasma Physics Laboratory, United States of America Qin, Hong Quast, Torsten Berliner Elektronenspeichering-Gesellschaft für Synchrotronstrahlung m.b.H., Germany Quigley, Peter Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education, United States of America Los Alamos National Laboratory, United States of America Ouintana-Valdez, Julie Raimondi, Pantaleo Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy University of California, Los Angeles, United States of America Ralph, Joseph Brookhaven National Laboratory, United States of America Ranjbar, Vahid Raparia, Deepak Brookhaven National Laboratory, United States of America Lawrence Berkeley National Laboratory, United States of America Ratti, Alessandro Raubenheimer, Tor Stanford Linear Accelerator Center Next Linear Collider Dept., United States of America Rawnsley, William TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Reass, William Los Alamos National Laboratory, United States of America Reed, Evan Minarik, United States of America Rees, Daniel Los Alamos National Laboratory, United States of America University of California, Los Angeles, United States of America Reiche, Sven Reitz, Wayne Private Address, United States of America Rice, David Laboratory for Elementary-Particle Physics Wilson Laboratory, United States of America Northern Illinois University, United States of America Rihaoui, Marwan Rimbault, Cecile Laboratoire de l'Accelerateur Lineaire, France European Organization for Nuclear Research, Switzerland Rinolfi, Louis Fermi National Accelerator Laboratory Technical Division, United States of Ristori, Leonardo America Rivetta, Claudio Stanford Linear Accelerator Center, United States of America Rivkin, Leonid Paul Scherrer Institute, Switzerland Rizzato, Felipe Universidade Federal do Rio Grande do Sul Istituto de Fisica UFRGS, Brazil

Roberson, Charles Office of Naval Research, United States of America Robin, David Lawrence Berkeley National Laboratory Advanced Light Source, United States of America Roblin, Yves Thomas Jefferson National Accelerator Facility, United States of America Rochford, James Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Rodrigues, Cleber National Synchrotron Light Laboratory, Brazil Rodriguez, Jose European Organization for Nuclear Research, Switzerland Rodriguez, Manuelita Los Alamos National Laboratory AOT Division, United States of America Roehrs, Michael Deutsches Elektronen-Synchrotron, Germany Siemens AG Medical Solutions Particle Therapy, Germany Rohdjess, Heiko Roling, Christof Air Liquide Division Techniques Avancees, France Romanenko, Alexander Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education. United States of America Romanov, Gennady Fermi National Accelerator Laboratory Technical Division, United States of America Roncarolo, Federico European Organization for Nuclear Research, Switzerland Ronsivalle, Concetta Ente per le Nuove Tecnologie, l'Energie e l'Ambiente Sede di Frascati, Italy Voss Scientific, United States of America Rose, David Brookhaven National Laboratory National Synchrotron Light Source, United States Rose, James of America Oak Ridge National Laboratory Spallation Neutron Source, United States of Rosenbalm, Kathy America Roser, Thomas Brookhaven National Laboratory, United States of America Hamburg University Institut fuer Experimentalphysik, Germany Rossbach, Jorg Rossi. Andrea Istituto Nazionale di Fisica Nucleare Milano Section, Italy Rossi, Lucio European Organization for Nuclear Research, Switzerland Rossmanith, Robert Forschungszentrum Karlsruhe GmbH Institute for Synchrotron Radiation, Germany Roth, Ian Diversified Technologies, Inc., United States of America Roy, Prabir Lawrence Berkeley National Laboratory, United States of America Roybal, Tish Los Alamos National Laboratory, United States of America Roybal, William Los Alamos National Laboratory LANSCE Division, United States of America Ruan, Jinhao Fermi National Accelerator Laboratory Accelerator Division, United States of America Rumrill, Ron Alpha Scientific Electronics, United States of America University of California Physics Department, United States of America Rusnak, Brian Russo, Thomas Brookhaven National Laboratory, United States of America Rust, Terry Los Alamos National Laboratory, United States of America Los Alamos National Laboratory, United States of America Rybarcyk, Lawrence Ryne, Robert Lawrence Berkeley National Laboratory Center for Beam Physics, United States of America Sabbi, GianLuca Lawrence Berkeley National Laboratory, United States of America Sablic, Oliver Communications & Power Industries Eimac Division, United States of America sabo, richard Minarik Motion Control, United States of America Sachwitz, Martin Deutsches Elektronensynchrotron DESY at Zeuthen, Germany Safranek, James Stanford Linear Accelerator Center Stanford Synchrotron Radiation Laboratory, United States of America Sagan, David Cornell University Laboratory for Elementary-Particle Physics, United States of America Sajaev, Vadim Argonne National Laboratory Advanced Photon Source, United States of America Sakamoto, Fumito University of Tokyo Nuclear Engineering Research Laboratory, Japan Sakanaka, Shogo High Energy Accelerator Research Organization, Japan Sakaue, Kazuyuki Waseda University Advanced Research Institute for Science and Engineering, Japan Sakumi, Akira The University of Tokyo Nuclear Professional School, Japan Los Alamos National Laboratory, United States of America Salas, Luce Samokhvalova, Ksenia Massachusetts Institute of Technology Plasma Science and Fusion Center, United States of America Sampayan, Stephen University of California, United States of America Sanchez, Andrea New Affiliation Request Pending, Unknown

Sanchez, Gary Los Alamos National Laboratory LANSCE Division, United States of America Sandoval, Jake Los Alamos National Laboratory AOT Division, United States of America Lawrence Berkelev National Laboratory, United States of America Sannibale, Fernando Sasaki, Shigemi Argonne National Laboratory Advanced Photon Source, United States of America High Energy Accelerator Research Organization, Japan Sato, Hikaru Brookhaven National Laboratory, United States of America Satogata, Todd Argonne National Laboratory Advanced Photon Source, United States of America Saunders, Claude Saverskiy, Aleksandr American Science and Engineering, Inc., United States of America Sawamura, Masaru Japan Atomic Energy Agency Free Electron Laser Laboratory, Japan Laser-Plasma Research Institute Shahid Beheshti University, Iran Sazegari, Vahid Scandale, Walter European Organization for Nuclear Research, Switzerland Scarpetti, Raymond Los Alamos National Laboratory, United States of America Scarpine, Victor Fermi National Accelerator Laboratory Accelerator Division, United States of America Schaa, Volker Gesellschaft f. Schwerionenforschung mbH Accelerator Physics Division, Germany Schachter, Levi Israel Institute of Technology Department of Electrical Engineering, Israel Schaller, Stuart New Affiliation Request Pending, Unknown Scheer, Michael Berliner Elektronenspeichering-Gesellschaft für Synchrotronstrahlung m.b.H., Germany Schellman, Heidi Northwestern University, United States of America Schempp, Alwin Johann Wolfgang Goethe-Universitaet, Germany Schietinger, Thomas Paul Scherrer Institute, Switzerland University of California, Los Angeles, United States of America Schiller, David European Organization for Nuclear Research, Switzerland Schmidt, Frank Siemens AG Medical Solutions Particle Therapy, Germany Schmidt, Roland Schmidt, Ruediger European Organization for Nuclear Research. Switzerland Schmor, Paul TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Schneider, J. David TechSource, Inc, United States of America Schnepp, Sascha Institut fuer Theorie Elektromagnetischer Felder Technische Universitaet Darmstadt, Germany Schoessow, Paul Tech-X Corporation, United States of America Schriber, Stan Michigan State University National Superconducting Cyclotron Laboratory, United States of America Schultheiss, Tom Advanced Energy Systems, United States of America General Atomics, United States of America Schulze, Martin Schwartz, Justin Florida State University National High Magnetic Field Laboratory, United States of America Pavilion Technologies, Inc, United States of America Schweiger, Carl Scott, Duncan Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Sears, Chris Stanford Linear Accelerator Center Accelerator Research Dept. B, United States of America Sedillo, James Los Alamos National Laboratory, United States of America Seeman, John Stanford Linear Accelerator Center, United States of America Sefkow, Adam Princeton Plasma Physics Laboratory, United States of America Fermi National Accelerator Laboratory Accelerator Division, United States of Seiya, Kiyomi America Stanford Linear Accelerator Center, United States of America Seletskiy, Sergei Semba, Tomoyuki Hitachi Ltd., Japan Semenov, Vladimir University of California at Berkeley, United States of America Fermi National Accelerator Laboratory Accelerator Division, United States of Sen, Tanaji America Sennyu, Katsuya Mitsubishi Heavy Industries Ltd., Japan Sensolini, Giancarlo Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Sereno, Nicholas Argonne National Laboratory, United States of America Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Serio, Mario Sernelius, David European Organization for Nuclear Research, Switzerland Servi, Andrei Stanford Linear Accelerator Center, United States of America Sessler, Andrew Lawrence Berkeley National Laboratory, United States of America Setty, Andrew **THALES** Communications, France

Setzer, Stefan Seville, Andrew Kingdom Shaftan, Timur of America Shamai, Yair Shapiro, Michael States of America Shaposhnikova, Elena Sharp, William Shaw, Robert Sheffield, Richard Shehab, Maher Shelley, Fred Shelton, Bruce Shemelin, Valery Shepherd, Ben Sherman, Joseph Shi, Jack Shiffler, Don Shih, Hsu-Ming Shiltsev, Vladimir Shimosaki, Yoshito Shinas, James Shintake, Tsumoru Shinton. Ian Shirasawa, Katsutoshi Shkvarunets, Anatoly Shoaee, Hamid Shoaf, Steven Shu, Quan-Sheng Sieker, Larry Simeoni, Wilson Simrock, Stefan Sinclair, Charles Singer, Waldemar Singer, Xenia Singh, Beni Singh, Om Skokos, Charalampos Smedley, John Smirnova, Evgenya Smith, Hillary Smith, Jeffrey Smith, Jonathan Smith, Richard Smith, Susan Smith, Tamson Sobol, Andrey Soltner, Helmut Solyak, Nikolay Sonnad, Kiran States of America Spencer, Cherrill Spencer, James Spencer, Martin Spentzouris, Linda

Siemens AG Medical Solutions Particle Therapy, Germany Science and Technology Facilites Council Rutherford Appleton Laboratory, United Brookhaven National Laboratory National Synchrotron Light Source, United States Soreq Nuclear Research Center, Israel Massachusetts Institute of Technology Plasma Science and Fusion Center, United European Organization for Nuclear Research, Switzerland University of California Physics Department, United States of America Oak Ridge National Laboratory, United States of America Los Alamos National Laboratory LANSCE Division, United States of America United Nations Educational, Scientific and Cultural Organization SESAME, Jordan Los Alamos National Laboratory LANSCE Division, United States of America Parsons, United States of America Cornell University, United States of America Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Los Alamos National Laboratory LANSCE Division, United States of America Kansas University, United States of America New Affiliation Request Pending, Unknown National Synchrotron Radiation Research Center, Taiwan Fermi National Accelerator Laboratory, United States of America High Energy Accelerator Research Organization, Japan Los Alamos National Laboratory, United States of America The Institute of Physical and Chemical Research Division of Spring-8, Japan Cockcroft Institute The University of Manchester, United Kingdom The Institute of Physical and Chemical Research Division of Spring-8, Japan University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Stanford Linear Accelerator Center, United States of America Argonne National Laboratory Advanced Photon Source, United States of America AMAC International Inc. Applied Research Center, United States of America New Affiliation Request Pending, Unknown Universidade Federal do Rio Grande do Sul Istituto de Fisica UFRGS, Brazil Deutsches Elektronen-Synchrotron, Germany Cornell University Department of Physics, United States of America Deutsches Elektronen-Synchrotron, Germany Deutsches Elektronen-Synchrotron, Germany Diamond Light Source Ltd, United Kingdom Argonne National Laboratory Advanced Photon Source, United States of America Institut de Mecanique Celeste et de Calcul des Ephemerides Equipe Astronomie et Systemes Dynamiques, France Brookhaven National Laboratory, United States of America Los Alamos National Laboratory, United States of America Los Alamos National Laboratory LANSCE Division, United States of America Stanford Linear Accelerator Center, United States of America Cockcroft Institute, United Kingdom Accuray, Inc, United States of America Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Los Alamos National Laboratory LANSCE Division, United States of America Tech-X Corporation, United States of America Forschungszentrum Julich GmbH, Germany Fermi National Accelerator Laboratory, United States of America Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United Stanford Linear Accelerator Center, United States of America Stanford Linear Accelerator Center, United States of America The Australian Synchrotron Project, Australia Illinois Institute of Technology, United States of America

Spentzouris, Panagiotis Fermi National Accelerator Laboratory, United States of America Spickermann, Thomas Los Alamos National Laboratory, United States of America Gesellschaft f. Schwerionenforschung mbH Accelerator Physics Division, Germany Spiller, Peter Spruit, Dan Lambda Americas, United States of America Stancari, Giulio Istituto Nazionale di Fisica Nucleare Sezione di Ferrara, Italy Los Alamos National Laboratory, United States of America Stanford, Lorraine Linac Systems, United States of America Starling, W. Startsev, Edward Princeton Plasma Physics Laboratory, United States of America Steck, Markus Gesellschaft f. Schwerionenforschung mbH, Germany Steerenberg, Rende European Organization for Nuclear Research, Switzerland Steier, Christoph Lawrence Berkeley National Laboratory Advanced Light Source, United States of America Steiner, Bastian Institut fuer Theorie Elektromagnetischer Felder Technische Universitaet Darmstadt, Germany Stern. Eric Fermi National Accelerator Laboratory, United States of America Stetson, Jeffry New Affiliation Request Pending, Unknown Stirbet, Mircea Thomas Jefferson National Accelerator Facility, United States of America Stockli, Martin Oak Ridge National Laboratory Spallation Neutron Source, United States of America Tech-X Corporation, United States of America Stoltz, Peter Stoops, Gerald Minarik Motion Control, United States of America Stout, Daniel Oak Ridge National Laboratory Spallation Neutron Source, United States of America New Affiliation Request Pending, Unknown Stovall, James University of Maryland Institute for Research in Electronics and Applied Physics, Stratakis, Diktys United States of America Strauss, Bruce U.S. Department of Energy, United States of America High Energy Accelerator Research Organization Accelerator Laboratory, Japan Suetsugu, Yusuke Sugai, Isao High Energy Accelerator Research Organization Accelerator Laboratory, Japan Suller, Victor Louisiana State University Center for Advanced Microstructure & Devices, United States of America Sullivan. Michael Stanford Linear Accelerator Center, United States of America Summers, Don University of Mississippi-Oxford, United States of America Sun, Changchun Free Electron Laser Laboratory Duke University, United States of America Sun, Xiang Argonne National Laboratory Advanced Photon Source, United States of America Sun, Yin-e Fermi National Accelerator Laboratory, United States of America Sung, Chieh University of California, Los Angeles, United States of America University of Maryland Institute for Research in Electronics and Applied Physics, Sutter, David United States of America Suwada, Tsuyoshi High Energy Accelerator Research Organization Accelerator Laboratory, Japan Suzuki, Toshio High Energy Accelerator Research Organization Accelerator Laboratory, Japan Swenson, Donald A. Linac Systems, United States of America Swinson, Christina Stanford Linear Accelerator Center, United States of America Syphers, Michael Fermi National Accelerator Laboratory, United States of America European Organization for Nuclear Research, Switzerland Taborelli, Mauro Tajima, Tsuyoshi Los Alamos National Laboratory, United States of America Takagi, Akira High Energy Accelerator Research Organization, Japan University of Tokyo Institute for Solid State Physics, Japan Takaki, Hirovuki Takala, Bruce Los Alamos National Laboratory, United States of America Takama, Shinichi Toshiba Corporation, Japan Japan Synchrotron Radiation Research Institute Accelerator Division, Japan Takao, Masaru High Energy Accelerator Research Organization Accelerator Laboratory, Japan Takayama, Ken Takeda, Yasuhiro High Energy Accelerator Research Organization Accelerator Laboratory, Japan Tokyo Institute of Technology Interdisciplinary Graduate School of Science and Tamura, Jun Engineering, Japan Tan, Cheng-Yang Fermi National Accelerator Laboratory, United States of America Tan, Yaw-Ren The Australian Synchrotron Project, Australia Tanabe, Toshiya Brookhaven National Laboratory, United States of America High Energy Accelerator Research Organization Accelerator Laboratory, Japan Tanaka, Hirokazu

Tang, Chuanxiang Tang, Johnny

Tang, Vincent Tarvainen, Olli Tecker, Frank Temkin, Richard

Temnykh, Alexander Teng, Lee Teran, Manny Terechkine, Iouri

Terzic, Balsa Teytelman, Dmitry Thangaraj, Jayakar

Thoma, Carsten Thomason, John

Thompson, Matthew Thomson, Jana Thurel, Yves Tian, Kai

Tigner, Maury

Tikhoplav, Rodion Toader, Adina Tochitsky, Sergei Todesco, Ezio Togawa, Kazuaki Tomassini, Sandro Tompkins, John

Tortschanoff, Theodor Torun, Yagmur Toya, Darren Toyokawa, Hiroyuki

Trail, Mark Trakhtenberg, Emil Travish, Gil Trbojevic, Dejan Treado, Todd Trujillo, Jean Tsoupas, Nicholaos Tsujii, Ryousuke Tvukhtin, Andrey Tzoufras, Michail Uesaka, Mitsuru Urakawa, Junji Urbin, John Uriot, Didier Ushakov, Andriy Vaccarezza, Cristina Vainionpaa, Jaakko

Valder, Barry

Tsinghua University in Beijing Accelerator Laboratory, People's Republic of China Oak Ridge National Laboratory Spallation Neutron Source, United States of America Lawrence Livermore National Laboratory, United States of America Los Alamos National Laboratory, United States of America European Organization for Nuclear Research, Switzerland Massachusetts Institute of Technology Plasma Science and Fusion Center, United States of America Cornell University Department of Physics, United States of America Argonne National Laboratory, United States of America ZTEC Instruments, United States of America Fermi National Accelerator Laboratory Technical Division, United States of America Northern Illinois University, United States of America Dimtel, Inc., United States of America University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Voss Scientific, United States of America Science and Technology Facilites Council Rutherford Appleton Laboratory, United Kingdom Lawrence Livermore National Laboratory, United States of America TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada European Organization for Nuclear Research, Switzerland University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education, United States of America Rochester University, United States of America Cockcroft Institute The University of Manchester, United Kingdom University of California, Los Angeles, United States of America European Organization for Nuclear Research, Switzerland Japan Synchrotron Radiation Research Institute Accelerator Division, Japan Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Fermi National Accelerator Laboratory Technical Division, United States of America European Organization for Nuclear Research, Switzerland Illinois Institute of Technology, United States of America Los Alamos National Laboratory AOT Division, United States of America National Institute of Advanced Industrial Science & Technology Research Institute of Instrumentation Frontier, Japan Varian Medical Systems Oncology Systems, United States of America Argonne National Laboratory, United States of America University of California, Los Angeles, United States of America Brookhaven National Laboratory, United States of America Communications & Power Industries, Inc., United States of America Los Alamos National Laboratory, United States of America Brookhaven National Laboratory, United States of America University of Tokyo Nuclear Engineering Research Laboratory, Japan Saint-Petersburg State University, Russia University of California, Los Angeles, United States of America The University of Tokyo Nuclear Professional School, Japan High Energy Accelerator Research Organization Accelerator Laboratory, Japan Linde BOC, United States of America Commissariat a l'Energie Atomique Direction des Sciences de la Matiere, France Deutsches Elektronensynchrotron DESY at Zeuthen, Germany Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati, Italy Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Wah Chang, United States of America

Valishev, Alexander Russian Academy of Sciences The Budker Institute of Nuclear Physics, Russia Van Tilborg, Jeroen Technische Universiteit Eindhoven, The Netherlands Vanecek, Cathy Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Variale, Vincenzo Istituto Nazionale di Fisica Nucleare Sezione di Bari, Italy Argonne National Laboratory Advanced Photon Source, United States of America Vasserman, Isaac Vassioutchenko, Alexandre Oak Ridge National Laboratory Spallation Neutron Source, United States of America Veitzer, Seth Tech-X Corporation, United States of America Fermi National Accelerator Laboratory, United States of America Velev, Gueorgui Verstovsek, Igor Cosylab, Ltd., Slovenia Veshcherevich, Vadim Cornell University Cornell Laboratory for Accelerator-Based Sciences and Education, United States of America Los Alamos National Laboratory, United States of America Vigil, Marianna Vinogradov, Nikolai Northern Illinois University, United States of America Visintini, Roberto Sincrotrone Trieste S.C.p.A. ELETTRA, Italy Vlachoudis, Vasilis European Organization for Nuclear Research, Switzerland Vlieks, Arnold Stanford Linear Accelerator Center, United States of America European Organization for Nuclear Research, Switzerland Vogel, Elmar Vogel, Hanspeter ACCEL Instruments GmbH, Germany Vogel, Vladimir High Energy Accelerator Research Organization, Japan Volkov, Vladimir Russian Academy of Sciences The Budker Institute of Nuclear Physics, Russia Fermi National Accelerator Laboratory, United States of America Wagner, Robert Fermi National Accelerator Laboratory, United States of America Wake, Masayoshi Waldron, William Lawrence Berkeley National Laboratory, United States of America University of California Physics Department, United States of America Walston, Sean Walstrom, Peter Los Alamos National Laboratory LANSCE Division, United States of America Walter, Mark University of Maryland Institute for Research in Electronics and Applied Physics, United States of America Walters, Dean Argonne National Laboratory Advanced Photon Source, United States of America Wang, Chun-Xi Argonne National Laboratory, United States of America Wang, Faya Stanford Linear Accelerator Center, United States of America Wang, Fuhua Massachusetts Institute of Technology Bates Linear Accelerator Center, United States of America Wang, Gang Brookhaven National Laboratory, United States of America Wang, Guimei Peking University, People's Republic of China Wang, Haitao Argonne National Laboratory, United States of America Oak Ridge National Laboratory Spallation Neutron Source, United States of Wang, Jian-Guang America Wang, Jiuqing Chinese Academy of Sciences Institute of High Energy Physics, People's Republic of China Wang, Jun University of Science and Technology of China National Synchrotron Radiation Laboratory, People's Republic of China Wang, Juwen Stanford Linear Accelerator Center, United States of America Wang, Lanfa Stanford Linear Accelerator Center, United States of America Wang, Lin University of Science and Technology of China National Synchrotron Radiation Laboratory, People's Republic of China Wang, Shaoheng Argonne National Laboratory, United States of America Wang, Xiaodong University of Southern California, United States of America Wang, Yusong Argonne National Laboratory Energy Systems and National Security, United States of America Los Alamos National Laboratory LANSCE Division, United States of America Wangler, Thomas Wanzenberg, Rainer Deutsches Elektronen-Synchrotron, Germany Warnock, Robert Stanford Linear Accelerator Center, United States of America Science and Technology Facilites Council Rutherford Appleton Laboratory, United Warsop, Christopher Kingdom Washio, Masakazu Waseda University Advanced Research Institute for Science and Engineering, Japan Watanabe, Takahiro Brookhaven National Laboratory, United States of America Lawrence Berkeley National Laboratory, United States of America Weber, Jonah

Weiler, Thomas European Organization for Nuclear Research, Switzerland Weise, Hans Deutsches Elektronen-Synchrotron, Germany Welch, Dale Voss Scientific, United States of America Wells, Russell Lawrence Berkeley National Laboratory, United States of America Welton, Robert Oak Ridge National Laboratory Spallation Neutron Source, United States of America Weng, Wu-Tsung Brookhaven National Laboratory, United States of America Wenndorff, Rainer Deutsches Elektronensynchrotron DESY at Zeuthen, Germany Werner, Gregory Colorado University at Boulder, United States of America University of California Physics Department, United States of America Westenskow, Glen Weterings, Wim European Organization for Nuclear Research, Switzerland White, Marion Argonne National Laboratory, United States of America Wiemerslage, Greg Argonne National Laboratory, United States of America Wienands, Ulrich Stanford Linear Accelerator Center, United States of America Wilcox, David Maric Trading Ltd, United Kingdom Wilcox, Russell Lawrence Berkeley National Laboratory, United States of America Wildner, Elena European Organization for Nuclear Research, Switzerland Williams, Derrick Oak Ridge National Laboratory Spallation Neutron Source, United States of America Williams, Joan Los Alamos National Laboratory, United States of America Williams, Peter Science and Technology Facilites Council Daresbury Laboratory, United Kingdom L-3 Communications Electron Devices, United States of America Wilsen, Craig Oak Ridge National Laboratory Spallation Neutron Source, United States of Wilson, Joshua America Winter, Axel Hamburg University Institut fuer Experimentalphysik, Germany Wittmer, Walter Stanford Linear Accelerator Center, United States of America Wolbers, Stephen Fermi National Accelerator Laboratory, United States of America Wolf, Zachary Stanford Linear Accelerator Center, United States of America Wollmann, Daniel Forschungszentrum Karlsruhe GmbH Institute for Synchrotron Radiation, Germany Wolski, Andrzej Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Wooldridge, Emma Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Wu, Chao University Maryland, United States of America Wu, Cong-Feng University of Science and Technology of China National Synchrotron Radiation Laboratory, People's Republic of China Stanford Linear Accelerator Center, United States of America Wu, Juhao Indiana University Cyclotron Facility, United States of America Wu, Oiong Wu, Wenzhong Free Electron Laser Laboratory Duke University, United States of America Michigan State University National Superconducting Cyclotron Laboratory, United Wu, Xiaoyu States of America Wu.Y. Free Electron Laser Laboratory Duke University, United States of America Wuestefeld, Godehard Berliner Elektronenspeichering-Gesellschaft für Synchrotronstrahlung m.b.H., Germany Wyles, Naomi Science and Technology Facilites Council Daresbury Laboratory, United Kingdom Tsinghua University in Beijing Accelerator Laboratory, People's Republic of China Xiang, Dao Xiao, Aimin Argonne National Laboratory Advanced Photon Source, United States of America Chinese Academy of Engineering Physics Institute of Fluid Physics, People's Xie, Weiping Republic of China Xu, Chao Lehigh University, United States of America Xu. Jin Argonne National Laboratory Physics Division, United States of America Brookhaven National Laboratory, United States of America Yakimenko, Vitaly Yakovlev, Vyacheslav Omega-P, Inc., United States of America Yamamoto, Akira High Energy Accelerator Research Organization, Japan Stanford Linear Accelerator Center, United States of America Yan, Yiton Argonne National Laboratory Advanced Photon Source, United States of America Yang, Bingxin Yang, Jun Huazhong University of Science and Technology, People's Republic of China Yang, Lingyun Indiana University Cyclotron Facility, United States of America Yang, Ming-Jen Fermi National Accelerator Laboratory, United States of America Yang, Yongliang University of Science and Technology of China National Synchrotron Radiation

Laboratory, People's Republic of China RIKEN Nishina Center, Japan Yano, Yasushige Argonne National Laboratory, United States of America Yao, Chihyuan Yarba, Victor Fermi National Accelerator Laboratory Technical Division, United States of America Stanford Linear Accelerator Center, United States of America Yeddulla, Muralidhar TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Yin. Yan Manhattan College, United States of America Yoder, Rodney Yonehara, Katsuya Illinois Institute of Technology, United States of America Yoon, Phil Fermi National Accelerator Laboratory, United States of America York, Richard Michigan State University National Superconducting Cyclotron Laboratory, United States of America Yoshida, Jun Hitachi Plant Technologies, Ltd., Japan Yoshii, Masahito High Energy Accelerator Research Organization Accelerator Laboratory, Japan Yoshikawa, Cary Fermi National Accelerator Laboratory Accelerator Division, United States of America Young, Karen Los Alamos National Laboratory LANSCE Division, United States of America Young, Llovd TechSource, Inc, United States of America Yu, Tiaoqin Huazhong University of Science and Technology, People's Republic of China Zagel, James Fermi National Accelerator Laboratory, United States of America Zaltsman, Alex Brookhaven National Laboratory, United States of America Zangenberg, Nikolaj Danfysik A/S, Denmark Zavodszky, Peter Michigan State University National Superconducting Cyclotron Laboratory, United States of America Zeisler, Stefan TRIUMF Canada's National Laboratory for Particle and Nuclear Physics, Canada Zelenski, Anatoli Brookhaven National Laboratory, United States of America Zeller, Al Michigan State University National Superconducting Cyclotron Laboratory, United States of America Chinese Academy of Engineering Physics Institute of Fluid Physics, People's Zhang, Linwen Republic of China Zhang, Wenwei Chinese Academy of Engineering Physics Institute of Fluid Physics, People's Republic of China Zhang, Wu Brookhaven National Laboratory, United States of America Zhang, Yan Oak Ridge National Laboratory Spallation Neutron Source, United States of America Zhang, Yuhong Thomas Jefferson National Accelerator Facility, United States of America Zhao, Qiang Michigan State University National Superconducting Cyclotron Laboratory, United States of America Zhao, Zhentang Shanghai Synchrotron Radiation Facility, People's Republic of China Zholents, Alexander Lawrence Berkeley National Laboratory Accelerator and Fusion Research, United States of America Zhou, Feng Chinese Academy of Sciences Institute of High Energy Physics, People's Republic of China Zhou, Jing Massachusetts Institute of Technology Plasma Science and Fusion Center, United States of America Zhou, Miaomiao University of California, Los Angeles, United States of America Zhou, Qiaogen Shanghai Synchrotron Radiation Facility, People's Republic of China Russian Academy of Sciences Institute for Nuclear Research, Russia Zhukov, Alexander Zimmermann, Frank European Organization for Nuclear Research, Switzerland Zisman, Michael Lawrence Berkeley National Laboratory, United States of America Fermi National Accelerator Laboratory Technical Division, United States of Zlobin, Alexander America Fermi National Accelerator Laboratory, United States of America Zwaska, Robert

ACKNOWLEDGMENTS

The PAC07 Organizing Committee, Scientific Program Committee, and Local Organizing Committee acknowledge and thank the following organizations for their sponsorship and support:

American Physical Society, Division of Physics of Beams, Institute of Electrical and Electronics Engineers, Nuclear and Plasma Sciences Society

National Science Foundation, U.S. Department of Energy

Los Alamos National Laboratory

Special thanks to the following individuals:

JACoW Database and Programming: Ivan Andrian (ELETTRA), Matt Arena (FNAL), Michael Carter (LANL), Volker Schaa (GSI)

Photography: Ivan Andrian (ELETTRA), Marion White (ANL)

COPYRIGHT AND USE INFORMATION

Copyright and Reprint Permission: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. For other copying, reprint, or republication permission, write to IEEE Copyrights Manager, IEEE Operations Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. All Rights reserved. Copyright ©2007 by the Institute of Electrical and Electronics Engineers, Inc.

IEEE Particle Accelerator Conference

©2007 IEEE. Personal use of this material is permitted. However, permission to reprint/republish this material for advertising or promotional purposes or for creating new collective works for resale or redistribution to servers or lists, or to reuse any copyrighted component of this work in other works must be obtained from the IEEE.

IEEE Catalog Number: 07CH37866, print edition IEEE Catalog Number: 07CH37866U, USB ISBN: 1-4244-0917-9, USB Library of Congress: 88-647453

Copies of the PAC07 proceedings (hard copy) are available from

IEEE Operations Center 445 Hoes Lane Piscataway, NJ 08855-1331 USA (Phone) +1 800 678 IEEE (Fax) +1 732 981 9667 E-mail: customer.service@ieee.org



Acknowledgement: "This material is based upon work supported by the Department of Energy, Office of High Energy Physics, Office of Nuclear Physics, Office of Fusion Energy Science, and Office of Basic Energy Science under Award Number DE-GF02-07ER41468.

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."