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**A Bibliography on Finite Element and
Related Methods Analysis in Reactor
Physics Computations (1971-1997)**

David C. Carpenter

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**A Bibliography on
Finite Element and Related Methods Analysis
in Reactor Physics Computations
(1971-1997)**

David C. Carpenter

*Bettis Atomic Power Laboratory
West Mifflin, PA 15122-0079*

INTRODUCTION

This bibliography provides a list of references on finite element and related methods analysis in reactor physics computations. These references have been published in scientific journals, conference proceedings, technical reports, thesis/dissertations and as chapters in reference books from 1971 to the present. Both English and non-English references are included. All references contained in the bibliography are sorted alphabetically by the first author's name and a subsort by date of publication.

The majority of the references relate to reactor physics analysis using the finite element method. Related topics include the boundary element method, the boundary integral method, and the global element method. All aspects of reactor physics computations relating to these methods are included: diffusion theory, deterministic radiation and neutron transport theory, kinetics, fusion research, particle tracking in finite element grids, and applications. For user convenience, many of the listed references have been categorized.

The list of references is not all inclusive. In general, nodal methods were purposely excluded, although a few references do demonstrate characteristics of finite element methodology using nodal methods (usually as a non-conforming element basis). This area could be expanded. The author is aware of several other references (conferences, thesis/dissertations, etc.) that were not able to be independently tracked using available resources and thus were not included in this listing.

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