DIRECTIONAL CORRELATIONS OF PARITY AND TIME-REVERSAL NON-CONSERVING
RADIATIONS EMITTED FROM ORIENTED NUCLEI *

Kenneth S. Krane

Lawrence Berkeley Laboratory
University of California
Berkeley, California 94720

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ABSTRACT

A recently-developed formalism for analyzing directional correlations of gamma radiations emitted from oriented nuclei is extended to include parity-violating and time-reversal-violating radiations. The generalized angular distribution coefficients needed for describing such radiations are expressed in terms of generalized F-coefficients, extensive tables of which are presented.

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I. INTRODUCTION

The technique of observing directional correlations of radiations emitted from oriented nuclear states (DCO measurements) is a fruitful means for deducing properties of the nuclear states and of their radiation fields. In addition, the establishment of a preferred direction of orientation of the nuclear spins makes possible the investigation of the spatial and temporal symmetries of the nuclear states and radiation fields.

A comprehensive formulism for analyzing DCO measurements has been recently proposed by Krane, Steffen, and Wheeler,¹ who discussed applications to directional correlations of parity and time-reversal non-violating gamma radiations. In the present work, the formulism is generalized to include beta-gamma DCO measurements, and the necessary modifications for studies of parity and time-reversal violations are given. Extensive tables of the generalized F-coefficients required for the various types of measurement are presented.

II. REVIEW OF DCO THEORY

In the following, a brief review of the theory of DCO will be given. Only those topics bearing on the present work are included; a comprehensive discussion is given in Ref. 1.

In Fig. 1 is shown a schematic of the nuclear states involved in the measurement. An initial state I_1 is oriented by a nuclear reaction or Coulomb excitation process, by low-temperature techniques, or by observation of a preceding radiation. (An oriented state is generally described in terms of an unequal distribution of magnetic substate populations, i.e., $p(m) \neq p(m')$ for some $m \neq m'$. In the present work it will usually be required that the initial state be polarized, in which case $p(m) \neq p(-m)$. Polarized states may be prepared by means of low-temperature magnetic dipole interactions, observation of a preceding beta-particle, or nuclear reactions involving polarized particles.)

Two radiations are observed emitted in cascade from the initial oriented state. The geometry of the experiment is illustrated in Fig. 2.

According to Ref. 1, the angular correlation of radiations X_1 and X_2 is given by

$$W(\theta_1 \theta_2 \phi) = \sum_{\lambda_1 \lambda_2} B_{\lambda_1}(I_1) A_{\lambda_1}^{\lambda_2 \lambda_1}(X_1) A_{\lambda_2}(X_2) H_{\lambda_1 \lambda_2}(\theta_1 \theta_2 \phi) \quad (1)$$

The orientation parameter B_{λ_1} describes the orientation of the initial state;² the index λ_1 may take integer values in the range 0, 1, ... $2I_1$. The B_{λ_1} for a polarized state are non-zero for odd as well as even values of λ_1 ; if the state is aligned (oriented but not polarized), the B_{λ_1} vanish for odd λ_1 .

The $A_{\lambda}^{\lambda_2 \lambda_1}$ are the generalized angular distribution coefficients, and are given by

$$A_{\lambda}^{\lambda_2 \lambda_1}(X_1) = \frac{\sum_{LL'} b_{\lambda}(LL'; X_1) F_{\lambda}^{\lambda_2 \lambda_1}(LL' I_2 I_1) \langle I_2 \| X_1(L) \| I_1 \rangle \langle I_2 \| X_1(L') \| I_1 \rangle^*}{\sum_L b_0(LL; X_1) |\langle I_2 \| X_1(L) \| I_1 \rangle|^2} \quad (2)$$

where the sum is carried out over the allowed multipolarities L, L' such that $\lambda \leq L + L'$. The b_{λ} are the particle parameters³ (unity for gamma radiation), and the $F_{\lambda}^{\lambda_2 \lambda_1}$ are generalized F-coefficients, defined by

$$F_{\lambda}^{\lambda_2 \lambda_1}(LL' I_2 I_1) = (-1)^{L' + \lambda_1 + \lambda_2 + 1} [\hat{I}_1 \hat{I}_2 \hat{L} \hat{L}' \hat{\lambda} \hat{\lambda}_1 \hat{\lambda}_2]^{1/2} \times \begin{pmatrix} L & L' & \lambda \\ 1 & -1 & 0 \end{pmatrix} \begin{Bmatrix} I_2 & L & I_1 \\ I_2 & L' & I_1 \\ \lambda_2 & \lambda & \lambda_1 \end{Bmatrix} \quad (3)$$

where $\hat{x} = 2x + 1$. The brackets $()$ and $\{ \}$ indicate Wigner 3-j and 9-j symbols, respectively. The indices $\lambda_2, \lambda_1, \lambda$ must form a closed vector triangle; that is, $\lambda_2 + \lambda_1 > \lambda > |\lambda_2 - \lambda_1|$. Properties of the generalized F-coefficients are discussed below in Sec. III.

The angular distribution coefficients A_{λ_2} are given in terms of the ordinary F-coefficients and vanish unless $\lambda_2 \leq 2I_2$. The present work concerns situations in which X_2 is a gamma-ray whose polarization is not measured, and hence for the present work λ_2 is restricted to even values. A detailed discussion of the angular distribution coefficients may be found in Refs. 3 and 4.

The angular function $H_{\lambda_1 \lambda_2}(\theta_1, \theta_2, \phi)$ is defined in Ref. 1. In that work, phase factors of the form $(-1)^{\lambda}$ and $(-1)^{\lambda_2}$ were neglected, since only even values of the indices were considered. The complete expression for the angular function

should include the factor $(-1)^\lambda$, which is important when radiation X_1 is β or parity-violating γ . The explicit expressions for the angular functions are:

$$\begin{aligned}
 H_{\lambda_1 \lambda \lambda_2}(\theta_1 \theta_2 \phi) = & \sum_{q \geq 0} \left\{ \begin{matrix} 2- & \delta_{q0} \\ & -21 \end{matrix} \right\} \langle \lambda_1 \ 0 \ \lambda q | \lambda_2 q \rangle (-1)^\lambda \\
 & \times \left(\frac{2\lambda + 1}{2\lambda_2 + 1} \right)^{1/2} \left[\frac{(\lambda - q)! (\lambda_2 - q)!}{(\lambda + q)! (\lambda_2 + q)!} \right]^{1/2} \\
 & \times P_{\lambda_1}^q(\cos \theta_1) P_{\lambda_2}^q(\cos \theta_2) \begin{Bmatrix} \cos q\phi \\ \sin q\phi \end{Bmatrix} . \quad (4)
 \end{aligned}$$

Of the two pairs of quantities in brackets, the upper member refers to cases in which $\lambda_1 + \lambda + \lambda_2$ is even, while the lower member is for odd values of the sum; the latter case is the one of interest for studies of time-reversal invariance. The P_{λ}^q are the associated Legendre polynomials.

A summary of the restrictions on the values of the indices λ_1 , λ , and λ_2 is given in Table I.

III. PROPERTIES OF GENERALIZED F-COEFFICIENTS

In presenting a tabulation of generalized F-coefficients, a number of simplifications enable the size of the tables to be reduced. These are given below.

A. Vanishing Index

If one (or all) of the indices λ_2 , λ_1 , λ vanish, the generalized F-coefficients reduce to

$$F_0^{00}(LL'I_2I_1) = \delta_{LL'} \quad (5a)$$

$$F_\lambda^{0\lambda_1}(LL'I_2I_1) = F_\lambda(LL'I_2I_1) \delta_{\lambda\lambda_1} \quad (5b)$$

$$F_\lambda^{\lambda_2 0}(LL'I_2I_1) = (-1)^{L+L'} F_\lambda(LL'I_1I_2) \delta_{\lambda\lambda_2} \quad (5c)$$

$$F_0^{\lambda_2 \lambda_1}(LL'I_2I_1) = (2\lambda_1 + 1)^{1/2} U_{\lambda_1}(LI_2I_1) \delta_{LL'} \delta_{\lambda_2 \lambda_1} \quad (5d)$$

(Note the reversal of the order of the states in Eq. (5c)). Definitions and tables of the ordinary F-coefficients F_λ and deorientation factors U_λ may be found in Ref. 4. Equations (5b-d) may be used to obtain the generalized F-coefficients if one of the indices vanish, and therefore no listings in the tables are given for these cases.

B. $L = 0$ Radiation Field

An allowed or first-forbidden beta radiation field may carry zero total angular momentum. In this case the 3-j symbol of Eq. (3) vanishes.

However, the particle parameter b_λ contains the inverse of the same 3-j symbol, and thus the product $b_\lambda F_\lambda^{\lambda_2 \lambda_1}$ remains finite.³ To circumvent this difficulty the 3-j symbol is set equal to unity in both the b_λ and $F_\lambda^{\lambda_2 \lambda_1}$ for the case $L = 0$. It should also be noted that the generalized F-coefficients for $L = 0$ can be reduced to certain ordinary F-coefficients:

$$\begin{aligned} F_\lambda^{\lambda_2 \lambda_1}(0 L' II) &= (-1)^{2I+\lambda_2+1} [\hat{I} \hat{\lambda} \hat{\lambda}_1 \hat{\lambda}_2]^{1/2} \begin{Bmatrix} \lambda_1 & \lambda & \lambda_2 \\ I & I & I \end{Bmatrix} \delta_{\lambda L'} \\ &= (-1)^{\lambda_2} F_\lambda(\lambda_2 \lambda_1 II) \begin{pmatrix} \lambda_2 & \lambda_1 & \lambda \\ 1 & -1 & 0 \end{pmatrix}^{-1} \delta_{\lambda L'} \end{aligned} \quad (6a)$$

The case $L = L' = 0$, for which $\lambda = 0$, must be dealt with using Eq. (6a), since Eq. (5d) yields the incorrect sign (caused by the choice of setting the 3-j symbol to unity). For this case

$$F_\lambda^{\lambda_2 \lambda_1}(0 0 I I) = -\sqrt{2\lambda_2 + 1} \delta_{\lambda_2 \lambda_1} \delta_{\lambda 0} \quad (6b)$$

C. Interchange of L and L'

$$F_\lambda^{\lambda_2 \lambda_1}(L' L I_2 I_1) = (-1)^{\lambda_1 + \lambda + \lambda_2} F_\lambda^{\lambda_2 \lambda_1}(LL' I_2 I_1) \quad (7)$$

This property of the generalized F-coefficients is particularly important for time-reversal studies. Note that when $\lambda_1 + \lambda + \lambda_2$ is even, the use of Eq. (7) results in an interference term ($L \neq L'$) in the generalized angular distribution coefficient depending on, for example, the gamma-ray mixing ratio as $(\delta + \delta^*) = 2|\delta|\cos \eta$, where η is the phase angle which characterizes the time-reversal violation ($\eta = 0$ or π for no violation); for $\lambda_1 + \lambda + \lambda_2 = \text{odd}$, this term becomes $(\delta - \delta^*) = 2i|\delta|\sin \eta$. This imaginary term then combines with

the imaginary angular function $H_{\lambda_1 \lambda \lambda_2}$ discussed above to yield a real result. It should also be noted that this interchange property requires the vanishing of the F-coefficients for $\lambda_1 + \lambda + \lambda_2$ odd and $L = L'$. This is to be expected, since the time-reversal violating effect depends on the interference between two different multipoles.

D. Interchange of λ_2 and λ_1 (or I_2 and I_1)

$$F_{\lambda}^{\lambda_1 \lambda_2}(LL' I_2 I_1) = (-1)^{\lambda_1 + \lambda + \lambda_2 + L + L'} F_{\lambda}^{\lambda_2 \lambda_1}(LL' I_1 I_2) \quad (8)$$

This property is not particularly useful for the present work since we are mostly considering cases in which λ_2 is even and λ_1 is odd.

IV. APPLICATIONS

A. β - γ Correlations

We consider first the case in which X_1 is a beta-ray and X_2 is a subsequent gamma-ray. For the present work, the γ -ray polarization will not be observed, and hence λ_2 is restricted to even values. If we assume the multipolarity of the gamma-ray to be at most quadrupole ($L = 2$), we need consider only $\lambda_2 = 2$ or 4 , since $\lambda_2 = 0$ is considered in Eq. (5b). As is well known, the β -decay violates conservation of spatial parity, and thus odd values of λ are permitted. The maximum value of λ is generally determined by the condition $\lambda \leq L + L'$, where L and L' are the possible values of the total angular momentum carried by the X_1 radiation field. However, a more stringent criterion follows from the β -particle parameters $b_\lambda(LL';\beta)$, which vanish unless $\lambda \leq j + j'$, where now j and j' are the possible values of the total angular momentum of the electron only.

Values of the generalized F-coefficients for β - γ correlations are listed for time-reversal non-violating ($\lambda_1 + \lambda + \lambda_2 = \text{even}$) cases in Tables II and III, and for time-reversal violating ($\lambda_1 + \lambda + \lambda_2 = \text{odd}$) cases in Tables II and IV. Values are tabulated for $\lambda_1 \leq 4$. Applications for various types of β -decays are discussed below.

1. Allowed β -Decay

Here the electron carries no orbital angular momentum, so $j = 1/2$ and $\lambda \leq 1$. The lepton field has possible multipolarities $L = 0$ or 1 . The $\lambda = 0$ terms may be obtained using Eqs. (5d) and (6b), so the only terms needed are for $\lambda = 1$, $LL' = 01$ and 11 . Since the $L = 0$ terms require a redefinition of the F-coefficient, they are listed separately in Table II.

2. First-Forbidden β -Decay

In this case, the electron may have one unit of orbital angular momentum, and thus $j \leq 3/2$ and $\lambda \leq 3$. The lepton field may have multipolarity $L = 0, 1$, or 2 . The $LL' = 01$ and 02 cases are listed in Table II, and the remaining combinations (11 , 12 , and 22) may be found in Tables III and IV. (It should be noted that the values for $\lambda = 2$ and $\lambda_1 = 2, 4$ may be found in Ref. 1.)

3. Second-Forbidden β -Decay

The electron carries at most two units of orbital angular momentum, so $j \leq 5/2$ and $\lambda \leq 5$. Values are tabulated only for $\lambda \leq 4$. The possible multipolarities are $LL' = 22, 23$, and 33 .

4. Time Reversal Violation in β -Decay

In this case we require $\lambda_1 + \lambda + \lambda_2 = \text{odd}$ with $\lambda = \text{odd}$. For $\lambda_2 = \text{even}$, λ_1 must be even (i.e., the initial state need only be aligned). The F-coefficients needed for this instance are given in Table IV.

B. γ - γ Correlations

The case in which X_1 and X_2 are both γ -rays was extensively treated in Ref. 1 for time-reversal non-violating ($\lambda_1 + \lambda + \lambda_2 = \text{even}$) directional correlations.

We presently consider the case of $\lambda_1 + \lambda + \lambda_2 = \text{odd}$, which terms arise in the study of violations of time reversal invariance. It is assumed that no radiation polarizations are measured, in which case λ and λ_2 must be even, and therefore λ_1 must be odd. In Table IV are listed values of the generalized F-coefficients for $\lambda_1 = 1, 3$; $\lambda = 2, 4$; and $\lambda_2 = 2, 4$. Values have been included for the case in which γ_1 is a mixture of dipole, quadrupole, and

octupole radiations. Again, it should be noted that the F-coefficients vanish for $L = L'$ when $\lambda_1 + \lambda + \lambda_2$ is odd.

If γ_1 contains irregular multipolarities arising from parity impurities in the nuclear levels, odd values of λ must be considered. For polarized initial states (λ_1 odd), the directional correlation may contain terms sensitive to the parity violation, but not to the presence of possible time-reversal violation ($\lambda_1 + \lambda + \lambda_2 = \text{even}$). However, the experimental observables arising from the parity violation can be determined from the angular distribution of γ_1 alone, without observing γ_2 in coincidence. It is also possible to have terms sensitive to simultaneous violation of parity and time-reversal ($\lambda_1 + \lambda + \lambda_2 = \text{odd}$, with $\lambda = \text{odd}$). Generalized F-coefficients needed to analyze this case are given in Table IV.

C. Triple Correlations

The treatment of triple gamma directional correlations from an unoriented initial state has been discussed in Ref. 1. If no radiation polarizations are observed, all λ 's are restricted to even values, and no sensitivity to time-reversal violating effects is obtained. Tables of the generalized F-coefficients for this case are included in Ref. 1. If the first radiation is a β -particle or circularly polarized γ -ray, odd values of λ_1 are permitted, and sensitivity to possible time-reversal violation is obtained; this case is treated as described in Sec. IV B above, using the appropriate orientation parameters. (A review of the types of directional and polarization correlations sensitive to time-reversal violating effects is given in the work of Boehm.⁵) If the circular polarization of only the second γ -ray in a triple γ -ray cascade is measured, odd values of λ are permitted. Table IV lists the generalized

F-coefficients for $\lambda_1 = 2, 4$; $\lambda = 1, 3$; and $\lambda_2 = 2, 4$. (The modifications of Eq. (2) necessary to include the efficiency of the circular polarization detector are discussed by Steffen and Alder.⁶) Finally, values for the triple γ correlation in which the polarization of the third radiation is measured ($\lambda_2 = \text{odd}$) may be obtained from the tabulated values with λ_1 and λ_2 interchanged (Eq. (8)).

V. SAMPLE COMPUTATIONS

A. β - γ DCO

We consider, for example, the case of a $2^+ - 2^+ - 0^+$ β - γ cascade from a polarized initial state; the β decay is of the allowed type, and the γ -ray is pure E2 radiation. The values of the indices λ_1 , λ , and λ_2 necessary to consider are listed below along with the appropriate angular function and generalized angular distribution function

$$\underline{\lambda_1 \lambda \lambda_2 = 000}$$

$$H_{000} = 1$$

$$A_0^{00} = 1$$

202

$$H_{202} = \frac{1}{\sqrt{5}} P_2(\cos \theta_2)$$

$$A_0^{22} = \sqrt{5} \frac{\Delta^2 + 1/2}{\Delta^2 + 1}$$

404

$$H_{404} = \frac{1}{3} P_4(\cos \theta_2)$$

$$A_0^{44} = 3 \frac{\Delta^2 - 2/3}{\Delta^2 + 1}$$

110

$$H_{110} = P_1(\cos \theta_1) = \cos \theta_1$$

$$A_1^{01} = \frac{2}{3} \frac{v}{c} \frac{\sqrt{3} \Delta - \sqrt{2}/4}{\Delta^2 + 1}$$

112

$$H_{112} = \frac{-1}{\sqrt{10}} [2 \cos \theta_1 P_2(\cos \theta_2) + 3 \sin \theta_1 \sin \theta_2 \cos \theta_2 \cos \phi_2]$$

$$A_1^{21} = \frac{2}{3} \frac{v}{c} \frac{-2.29 \Delta - 0.94}{\Delta^2 + 1}$$

312

$$H_{312} = \frac{-3}{\sqrt{35}} [-\cos \theta_1 P_2(\cos \theta_2) + \sin \theta_1 \sin \theta_2 \cos \theta_2 \cos \phi]$$

$$A_1^{23} = \frac{2}{3} \frac{v}{c} \frac{2.45 \Delta - 1.50}{\Delta^2 + 1}$$

314

$$H_{314} = \frac{-2}{\sqrt{21}} [\cos \theta_1 P_4(\cos \theta_2) + \frac{1}{4} \sin \theta_1 P_4^1(\cos \theta_2) \cos \phi]$$

$$A_1^{43} = \frac{2}{3} \frac{v}{c} \frac{-2.12 \Delta - 1.73}{\Delta^2 + 1}$$

212

$$H_{212} = \frac{-31}{\sqrt{10}} \sin \theta_1 \sin \theta_2 \cos \theta_2 \sin \phi$$

$$A_1^{22} = \frac{2}{3} \frac{v}{c} \frac{1.94 i \Delta \sin \eta}{\Delta^2 + 1}$$

414

$$H_{414} = \frac{-i}{2\sqrt{15}} \sin \theta_1 P_4^1(\cos \theta_2) \sin \phi$$

$$A_1^{44} = \frac{2}{3} \frac{v}{c} \frac{4.74 i \Delta \sin \eta}{\Delta^2 + 1}$$

In the above, Δ is the ratio of Fermi to Gamow-Teller matrix elements in the β -radiation field; the expression for the β -particle parameters may be found in the work of Alder et al.⁷

If we are attempting an experimental determination of the ratio Δ by measuring the $\beta - \gamma$ DCO from a low-temperature polarized sample (choosing the orientation parameters $B_1 = 1.027$, $B_2 = 0.513$, $B_3 = 0.156$, $B_4 = 0.027$, corresponding to cooling the sample to a temperature equal to its hyperfine splitting parameter) we select the geometry $\theta_2 = \pi/2$, $\phi = 0$ and we measure the difference $[W(\theta_1 = 0) - W(\theta_1 = \pi)]$, by, for example, reversing the direction of the applied polarizing field. The 000, 202, 404, 212, and 414 terms do not contribute to this difference, leaving only the 110, 112, 312, and 314 terms, with the result

$$W(\theta_1 = 0, \theta_2 = \pi/2, \phi = 0) - W(\theta_1 = \pi, \theta_2 = \pi/2, \phi = 0) = \frac{2}{3} \frac{v}{c} \left[\frac{4.45 \Delta - 0.524}{\Delta^2 + 1} \right]$$

This may be compared with the result of a similar measurement in which only the angular distribution of the β -particle is measured, for which one obtains

$$W(\theta_1 = 0) - W(\theta_1 = \pi) = \frac{2}{3} \frac{v}{c} \left[\frac{3.56 \Delta - 0.726}{\Delta^2 + 1} \right] .$$

Thus by performing the DCO measurement the sensitivity to the ratio Δ has been increased by 25%.

The 212 and 414 contributions shown above arise from possible violation of time-reversal invariance in the β -decay. The magnitude of the violation is described by the phase angle η , where

$$\tilde{\Delta} = \Delta e^{i\eta} .$$

The ratio Δ is taken to be the magnitude of $\tilde{\Delta}$. (In the above expressions for the time-reversal non-violating terms, the quantity $\cos \eta$ has been neglected.) Selecting the geometry $\theta_1 = \pi/2$, $\theta_2 = \pi/4$, $\phi = \pi/2$, we obtain the distribution function

$$W(\theta_1 = \pi/2, \theta_2 = \pi/4, \phi = \pi/2) = \frac{2}{3} \frac{v}{c} (-0.293 \Delta \sin \eta) / (1 + \Delta^2) \quad .$$

B. γ - γ DCO

The sensitivity of the DCO technique to γ -ray mixing ratios was discussed in Ref. 1. In the present report, we are concerned with measurements of T-violation in the γ -radiation field. We again consider a $2^+ - 2^+ - 0^+$ cascade, in which the first γ -transition may be a mixture of M1 and E2 radiation. The same orientation parameters used above will be assumed. The geometry which gives the maximum measurable effect is $\theta_1 = \pi/2$, $\theta_2 = \pi/2$, $\phi = \pi/4$. For this geometry, the necessary indices, along with the computed angular function and generalized angular distribution coefficients are shown below:

$$\underline{\lambda_1 \lambda_2 = 122}$$

$$H_{122} = 0.6124 \, i$$

$$A_2^{21} = \frac{-21|\delta|\sin \eta}{1 + |\delta|^2} \quad (0.354)$$

322

$$H_{322} = 0.2004 \, i$$

$$A_2^{23} = \frac{-21|\delta|\sin \eta}{1 + |\delta|^2} \quad (0.926)$$

324

$$H_{324} = -0.2362 \text{ i}$$

$$A_2^{43} = \frac{-2i|\delta|\sin\eta}{1 + |\delta|^2} (1.464)$$

In the above, we define $\delta = \langle E2 \rangle / \langle M1 \rangle = |\delta|e^{i\eta}$. Thus the time-reversal violating term in the angular distribution is given by

$$W(\theta_1 = \pi/2, \theta_2 = \pi/2, \phi = \pi/4) = \frac{|\delta|\sin\eta}{1 + |\delta|^2} (-0.185)$$

If γ_1 also contains a parity impurity, the DCO measurement may be made sensitive to simultaneous parity and time-reversal violation. (This corresponds to the "irregular" transition, that admixture arising from the parity mixing, being out of phase with the regular components.) This measurement is somewhat similar to the $\beta - \gamma$ DCO discussed above, since the β decay violates parity. We choose the geometry $\theta_1 = \pi/2$, $\theta_2 = \pi/4$, $\phi = \pi/2$, and require the indices:

$$\underline{\lambda_1 \lambda \lambda_2 = 212}$$

$$H_{212} = -0.4743 \text{ i}$$

$$A_1^{22} = \frac{-2i|\delta||\varepsilon|\sin\eta}{1 + |\delta|^2 + |\varepsilon|^2} (-1.16)$$

414

$$H_{414} = -0.0807 \text{ i}$$

$$A_1^{44} = \frac{-2i|\delta||\epsilon|\sin\eta}{1 + |\delta|^2 + |\epsilon|^2} \quad (1.13)$$

232

$$H_{232} = -0.2372 \, i$$

$$A_3^{22} = \frac{-2i|\delta||\epsilon|\sin\eta}{1 + |\delta|^2 + |\epsilon|^2} \quad (-0.331)$$

234

$$H_{234} = 0.2795 \, i$$

$$A_3^{42} = \frac{-2i|\delta||\epsilon|\sin\eta}{1 + |\delta|^2 + |\epsilon|^2} \quad (0.209)$$

432

$$H_{432} = 0.2795 \, i$$

$$A_3^{24} = \frac{-2i|\delta||\epsilon|\sin\eta}{1 + |\delta|^2 + |\epsilon|^2} \quad (0.209)$$

434

$$H_{434} = 0.1291 \, i$$

$$A_3^{44} = \frac{-2i|\delta||\epsilon|\sin\eta}{1 + |\delta|^2 + |\epsilon|^2} \quad (-1.32)$$

The angular distribution then becomes

$$W(\theta_1 = \pi/2, \theta_2 = \pi/4, \phi = \pi/2) = \frac{|\delta||\epsilon|\sin\eta}{1 + |\delta|^2 + |\epsilon|^2} (-0.435)$$

where now η is the phase angle defined by $\epsilon\delta = |\epsilon||\delta|e^{i\eta}$, and ϵ is the irregular-to-regular mixing ratio $\langle \tilde{E}1 \rangle / \langle M1 \rangle$.

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FOOTNOTES AND REFERENCES

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Table I. Restrictions on Indices $\lambda_1, \lambda, \lambda_2$

Index	Allowed Range	Odd ^a	Even ^a
λ_1	$\lambda_1 \leq 2I_1$	Initial state polarized	Initial state aligned
λ	$\lambda \leq L_1 + L_1'$	Radiation X_1 is β , P-violating or circularly polarized γ	Directional distribution of P-nonviolating radiation X_1
λ_2	$\begin{cases} \lambda_2 \leq L_2 + L_2' \\ \lambda_2 \leq 2I_2 \end{cases}$	Radiation X_2 is P-violating or circularly polarized γ	Directional distribution of P-nonviolating radiation X_2
$\lambda_1 + \lambda + \lambda_2$	$\begin{cases} \lambda_1 + \lambda_2 \geq \lambda \\ \lambda_1 - \lambda_2 \leq \lambda \end{cases}$	T-violation	T-nonviolation

^aIn column 4 are listed situations in which the various indices (and their sum) are restricted to even values. The possible situations which additionally give rise to odd values are listed in column 3.

Table II. Generalized F-coefficients $F_{\lambda}^{\lambda_2 \lambda_1}(OL'II)$
(In tabulation $L' = \lambda$)

λ_1	λ	λ_2	$l=1/2$	$l=1$	$l=3/2$	$l=2$	$l=5/2$	$l=3$	$l=7/2$	$l=4$
1	1	2	-0.0000	-1.9365	-2.1909	-2.2913	-2.3422	-2.3717	-2.3905	-2.4031
3	1	2	-0.0000	-0.0000	2.9494	2.4495	2.6349	2.7386	2.8031	2.8460
3	1	4	-0.0000	-0.0000	-0.0000	-2.1213	-2.6186	-2.8723	-3.0237	-3.1225
2	1	2	0.0000	3.3541	2.4495	1.9365	1.6036	1.3693	1.1952	1.0607
4	1	4	0.0000	0.0000	0.0000	4.7434	3.9279	3.3541	2.9277	2.5981
2	2	2	-0.0000	-2.9589	-0.0000	1.0714	1.5972	1.8977	2.0466	2.2134
4	2	2	-0.0000	-0.0000	-0.0000	-1.9166	-2.4898	-2.8031	-2.9966	-3.1254
2	2	4	-0.0000	-0.0000	-0.0000	-1.9166	-2.4898	-2.8031	-2.9766	-3.1254
4	2	4	-0.0000	-0.0000	-0.0000	-5.0254	-2.2474	-0.6621	.3336	1.0319
1	2	2	0.0000	3.3541	2.4495	1.9365	1.6036	1.3693	1.1952	1.0607
3	2	2	0.0000	0.0000	-3.7417	-3.3806	-2.9459	-2.5820	-2.2887	-2.0513
3	2	4	0.0000	0.0000	0.0000	4.0089	4.0089	3.7081	3.3806	3.0817

λ_1	λ	λ_2	$l=9/2$	$l=5$	$l=11/2$	$l=6$	$l=13/2$	$l=7$	$l=15/2$	$l=8$
1	1	2	-2.4121	-2.4187	-2.4237	-2.4275	-2.4306	-2.4330	-2.4350	-2.4367
3	1	2	2.8762	2.8983	2.9149	2.9277	2.9373	2.9459	2.9526	2.9580
3	1	4	-3.1909	-3.2404	-3.2774	-3.3059	-3.3282	-3.3461	-3.3607	-3.3727
2	1	2	.9535	.8660	.7933	.7319	.6794	.6339	.5941	.5590
4	1	4	2.3355	2.1213	1.9433	1.7928	1.6641	1.5526	1.4552	1.3693
2	2	2	2.3028	2.3683	2.4178	2.4560	2.4862	2.5105	2.5303	2.5467
4	2	2	-3.2157	-3.2817	-3.3313	-3.3696	-3.3999	-3.4241	-3.4439	-3.4603
2	2	4	-3.2157	-3.2817	-3.3313	-3.3696	-3.3999	-3.4241	-3.4439	-3.4603
4	2	4	1.4729	1.8177	2.0780	2.2793	2.4383	2.5661	2.6704	2.7566
1	2	2	.9535	.8660	.7933	.7319	.6794	.6339	.5941	.5590
3	2	2	-1.8566	-1.6940	-1.5581	-1.4415	-1.3409	-1.2533	-1.1763	-1.1082
3	2	4	2.8204	2.5944	2.3989	2.2288	2.0801	1.9493	1.8334	1.7302

Table III. Generalized F-coefficients $F_{\lambda}^{\lambda_2 \lambda_1}(LL'I_2 I_1)$
for $\lambda_1 + \lambda + \lambda_2 = \text{even}$

I ₂	I ₁	λ ₁	λ	λ ₂	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
3/2	1/2	1	1	2	-1.5811	.5477	0.0000	-.3162	0.0000	0.0000
3/2	1/2	1	3	2	0.0000	.4472	0.0000	1.5492	0.0000	0.0000
5/2	1/2	1	1	2	0.0000	0.0000	0.0000	-.7888	.6375	.2817
5/2	1/2	1	3	2	0.0000	0.0000	0.0000	-.4140	-.2928	1.0351
5/2	1/2	1	3	4	0.0000	0.0000	0.0000	1.8516	-.2182	-.3086
7/2	1/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5175
7/2	1/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.4226
7/2	1/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	1.2536
I ₂	I ₁	λ ₁	λ	λ ₂	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
1	1	1	1	2	-1.3093	.5477	0.0000	.2739	0.0000	0.0000
1	1	1	3	2	0.0000	-.6708	0.0000	1.3416	0.0000	0.0000
2	1	1	1	2	-1.6202	-.0000	0.0000	-.5401	.6901	.3086
2	1	1	3	2	0.0000	.4226	.7559	1.1339	.0000	1.1339
2	1	1	3	4	0.0000	-.8783	.6910	1.3093	-.1708	-.2182
3	1	1	1	2	0.0000	0.0000	0.0000	-.8946	.2390	-.2795
3	1	1	3	2	0.0000	0.0000	0.0000	-.4695	-.2928	.6847
3	1	1	3	4	0.0000	0.0000	0.0000	1.6413	.1279	.9574
4	1	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6069
4	1	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.4955
4	1	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	1.3048
I ₂	I ₁	λ ₁	λ	λ ₂	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
3/2	3/2	1	1	2	-1.1314	-.2191	0.0000	-.5657	.7155	.2828
3/2	3/2	3	1	2	-1.5875	-.8198	0.0000	.5292	.2869	-.0756
3/2	3/2	1	3	2	0.0000	-.6261	.2828	.6928	.2191	1.0392
3/2	3/2	3	3	2	0.0000	.5367	-.8485	1.3856	.0730	-.2309
5/2	3/2	1	1	2	-1.5875	-.2683	0.0000	-.7307	.2385	-.2331
5/2	3/2	3	1	2	.4243	.7889	0.0000	-.7475	-.9289	.3990
5/2	3/2	3	1	4	-1.8974	.9621	0.0000	.8132	-.5498	-.2033
5/2	3/2	1	3	2	0.0000	.4069	.8795	1.0052	.0078	.8795
5/2	3/2	1	3	4	0.0000	-.8398	-.3105	.4732	.2508	.8971
5/2	3/2	3	3	2	0.0000	-.1252	-.3240	-.6348	-.2592	.8332
5/2	3/2	3	3	4	0.0000	.3283	-1.6993	1.6546	-.0410	-.4855
7/2	3/2	1	1	2	0.0000	0.0000	0.0000	-.9258	.0000	-.4629
7/2	3/2	3	1	2	0.0000	0.0000	0.0000	.2474	.7636	-.4949
7/2	3/2	3	1	4	0.0000	0.0000	0.0000	-.7340	.9061	.6117
7/2	3/2	1	3	2	0.0000	0.0000	0.0000	-.4860	-.2916	.5669
7/2	3/2	1	3	4	0.0000	0.0000	0.0000	1.4416	.2595	.9344
7/2	3/2	3	3	2	0.0000	0.0000	0.0000	.1380	.0972	-.5459
7/2	3/2	3	3	4	0.0000	0.0000	0.0000	-.3073	-.1475	.9960
9/2	3/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6423
9/2	3/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.1717
9/2	3/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.4126
9/2	3/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5244
9/2	3/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	1.2605
9/2	3/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.1165
9/2	3/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.2687

					L, L'						
I_2	I_1	λ_1	λ	λ_2	1,1	1,2	1,3	2,2	2,3	3,3	
1	2	1	1	2	.4743	-.8485	0.0000	-.6852	.6600	.2102	
1	2	3	1	2	-1.7748	-.7937	0.0000	.5916	.3024	-.0845	
1	2	1	3	2	0.0000	.1732	-.7746	-.7746	.3464	.7746	
1	2	3	3	2	0.0000	-.3464	-1.3555	1.5492	.0289	-.2582	
2	2	1	1	2	-.9354	-.5477	0.0000	-.6682	.1278	-.2673	
2	2	3	1	2	-1.5000	-.1464	0.0000	-.3571	-.8196	.4643	
2	2	3	1	4	-1.7321	1.0142	0.0000	.7423	-.5323	-.1856	
2	2	1	3	2	0.0000	-.6069	.2673	.4676	.2347	.6547	
2	2	1	3	4	0.0000	.3320	-1.0415	-.9719	.3501	.7559	
2	2	3	3	2	0.0000	.5750	-.2004	.9352	-.1108	.8729	
2	2	3	3	4	0.0000	-.5190	-1.0856	1.5196	-.1059	-.4432	
3	2	1	1	2	-1.5492	-.4243	0.0000	-.7746	-.0756	-.4196	
3	2	3	1	2	.6211	1.0205	0.0000	-.7246	-.3232	-.1553	
3	2	3	1	4	-2.1712	.5946	0.0000	.0000	.635	.5428	
3	2	1	3	2	0.0000	.3959	.9297	.9487	.0154	.7642	
3	2	1	3	4	0.0000	-.7785	-.6648	-.0000	.3237	.5528	
3	2	3	3	2	0.0000	-.1732	-.4860	-.7680	-.2559	.4041	
3	2	3	3	4	0.0000	.3873	-.8504	1.5152	-.0173	.7071	
4	2	1	1	2	0.0000	0.0000	0.0000	-.9344	-.1579	-.5373	
4	2	3	1	2	0.0000	0.0000	0.0000	.3746	1.0130	-.4869	
4	2	3	1	4	0.0000	0.0000	0.0000	-.9863	.8336	.2466	
4	2	1	3	2	0.0000	0.0000	0.0000	-.4904	-.2901	.5150	
4	2	1	3	4	0.0000	0.0000	0.0000	1.2914	.3183	.7533	
4	2	3	3	2	0.0000	0.0000	0.0000	.1635	.1370	-.6485	
4	2	3	3	4	0.0000	0.0000	0.0000	-.4130	-.2036	.9636	
5	2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6583	
5	2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.2639	
5	2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.5901	
5	2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5375	
5	2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	1.2019	
5	2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.1792	
5	2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.3844	

	I_2	I_1	A_1	A	A_2	$I_{1,1}$	$I_{1,2}$	$I_{1,3}$	$I_{1,4}$	$I_{1,5}$	$I_{1,6}$	$I_{1,7}$	$I_{1,8}$	$I_{1,9}$	$I_{1,10}$	$I_{1,11}$	$I_{1,12}$	$I_{1,13}$	$I_{1,14}$	$I_{1,15}$	$I_{1,16}$	$I_{1,17}$	$I_{1,18}$	$I_{1,19}$	$I_{1,20}$	$I_{1,21}$	$I_{1,22}$	$I_{1,23}$	$I_{1,24}$	$I_{1,25}$	$I_{1,26}$	$I_{1,27}$	$I_{1,28}$	$I_{1,29}$	$I_{1,30}$	$I_{1,31}$	$I_{1,32}$	$I_{1,33}$	$I_{1,34}$	$I_{1,35}$	$I_{1,36}$	$I_{1,37}$	$I_{1,38}$	$I_{1,39}$	$I_{1,40}$	$I_{1,41}$	$I_{1,42}$	$I_{1,43}$	$I_{1,44}$	$I_{1,45}$	$I_{1,46}$	$I_{1,47}$	$I_{1,48}$	$I_{1,49}$	$I_{1,50}$	$I_{1,51}$	$I_{1,52}$	$I_{1,53}$	$I_{1,54}$	$I_{1,55}$	$I_{1,56}$	$I_{1,57}$	$I_{1,58}$	$I_{1,59}$	$I_{1,60}$	$I_{1,61}$	$I_{1,62}$	$I_{1,63}$	$I_{1,64}$	$I_{1,65}$	$I_{1,66}$	$I_{1,67}$	$I_{1,68}$	$I_{1,69}$	$I_{1,70}$	$I_{1,71}$	$I_{1,72}$	$I_{1,73}$	$I_{1,74}$	$I_{1,75}$	$I_{1,76}$	$I_{1,77}$	$I_{1,78}$	$I_{1,79}$	$I_{1,80}$	$I_{1,81}$	$I_{1,82}$	$I_{1,83}$	$I_{1,84}$	$I_{1,85}$	$I_{1,86}$	$I_{1,87}$	$I_{1,88}$	$I_{1,89}$	$I_{1,90}$	$I_{1,91}$	$I_{1,92}$	$I_{1,93}$	$I_{1,94}$	$I_{1,95}$	$I_{1,96}$	$I_{1,97}$	$I_{1,98}$	$I_{1,99}$	$I_{1,100}$	$I_{1,101}$	$I_{1,102}$	$I_{1,103}$	$I_{1,104}$	$I_{1,105}$	$I_{1,106}$	$I_{1,107}$	$I_{1,108}$	$I_{1,109}$	$I_{1,110}$	$I_{1,111}$	$I_{1,112}$	$I_{1,113}$	$I_{1,114}$	$I_{1,115}$	$I_{1,116}$	$I_{1,117}$	$I_{1,118}$	$I_{1,119}$	$I_{1,120}$	$I_{1,121}$	$I_{1,122}$	$I_{1,123}$	$I_{1,124}$	$I_{1,125}$	$I_{1,126}$	$I_{1,127}$	$I_{1,128}$	$I_{1,129}$	$I_{1,130}$	$I_{1,131}$	$I_{1,132}$	$I_{1,133}$	$I_{1,134}$	$I_{1,135}$	$I_{1,136}$	$I_{1,137}$	$I_{1,138}$	$I_{1,139}$	$I_{1,140}$	$I_{1,141}$	$I_{1,142}$	$I_{1,143}$	$I_{1,144}$	$I_{1,145}$	$I_{1,146}$	$I_{1,147}$	$I_{1,148}$	$I_{1,149}$	$I_{1,150}$	$I_{1,151}$	$I_{1,152}$	$I_{1,153}$	$I_{1,154}$	$I_{1,155}$	$I_{1,156}$	$I_{1,157}$	$I_{1,158}$	$I_{1,159}$	$I_{1,160}$	$I_{1,161}$	$I_{1,162}$	$I_{1,163}$	$I_{1,164}$	$I_{1,165}$	$I_{1,166}$	$I_{1,167}$	$I_{1,168}$	$I_{1,169}$	$I_{1,170}$	$I_{1,171}$	$I_{1,172}$	$I_{1,173}$	$I_{1,174}$	$I_{1,175}$	$I_{1,176}$	$I_{1,177}$	$I_{1,178}$	$I_{1,179}$	$I_{1,180}$	$I_{1,181}$	$I_{1,182}$	$I_{1,183}$	$I_{1,184}$	$I_{1,185}$	$I_{1,186}$	$I_{1,187}$	$I_{1,188}$	$I_{1,189}$	$I_{1,190}$	$I_{1,191}$	$I_{1,192}$	$I_{1,193}$	$I_{1,194}$	$I_{1,195}$	$I_{1,196}$	$I_{1,197}$	$I_{1,198}$	$I_{1,199}$	$I_{1,200}$	$I_{1,201}$	$I_{1,202}$	$I_{1,203}$	$I_{1,204}$	$I_{1,205}$	$I_{1,206}$	$I_{1,207}$	$I_{1,208}$	$I_{1,209}$	$I_{1,210}$	$I_{1,211}$	$I_{1,212}$	$I_{1,213}$	$I_{1,214}$	$I_{1,215}$	$I_{1,216}$	$I_{1,217}$	$I_{1,218}$	$I_{1,219}$	$I_{1,220}$	$I_{1,221}$	$I_{1,222}$	$I_{1,223}$	$I_{1,224}$	$I_{1,225}$	$I_{1,226}$	$I_{1,227}$	$I_{1,228}$	$I_{1,229}$	$I_{1,230}$	$I_{1,231}$	$I_{1,232}$	$I_{1,233}$	$I_{1,234}$	$I_{1,235}$	$I_{1,236}$	$I_{1,237}$	$I_{1,238}$	$I_{1,239}$	$I_{1,240}$	$I_{1,241}$	$I_{1,242}$	$I_{1,243}$	$I_{1,244}$	$I_{1,245}$	$I_{1,246}$	$I_{1,247}$	$I_{1,248}$	$I_{1,249}$	$I_{1,250}$	$I_{1,251}$	$I_{1,252}$	$I_{1,253}$	$I_{1,254}$	$I_{1,255}$	$I_{1,256}$	$I_{1,257}$	$I_{1,258}$	$I_{1,259}$	$I_{1,260}$	$I_{1,261}$	$I_{1,262}$	$I_{1,263}$	$I_{1,264}$	$I_{1,265}$	$I_{1,266}$	$I_{1,267}$	$I_{1,268}$	$I_{1,269}$	$I_{1,270}$	$I_{1,271}$	$I_{1,272}$	$I_{1,273}$	$I_{1,274}$	$I_{1,275}$	$I_{1,276$
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I ₂	I ₁	λ ₁	λ	λ ₂	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
1	3	1	1	2	0.0000	0.0000	0.0000	.2981	-.8765	-.4658
1	3	3	1	2	0.0000	0.0000	0.0000	-.7746	-.8281	.4841
1	3	1	3	2	0.7000	0.0000	0.0000	.1565	-.1464	-.6847
1	3	3	3	2	0.0000	0.0000	0.0000	-.3381	.1845	.9860
2	3	1	1	2	.7551	-1.0351	0.0000	-.3780	-.5533	-.4252
2	3	3	1	2	-1.9640	-0.0000	0.0000	-.6547	-.6389	.0818
2	3	3	1	4	.3780	-.7246	0.0000	-.7559	1.0697	.5354
2	3	1	3	2	0.0000	.2415	-.8660	-.8597	.2259	-.1157
2	3	1	3	4	0.0000	-.0627	.3750	.3436	-.2184	-.7572
2	3	3	3	2	0.0000	-.3912	.2004	1.1429	-.0000	.9444
2	3	3	3	4	0.0000	.1059	-.1809	-.5803	.2312	.9027
3	3	1	1	2	-.6847	-.8216	0.0000	-.5934	-.4830	-.4564
3	3	3	1	2	-1.1157	.5534	0.0000	-.7642	-.2330	-.2635
3	3	3	1	4	-1.6581	.0000	0.0000	-.5528	.8357	.2764
3	3	1	3	2	0.0000	-.5910	.2113	.2875	.2315	.3727
3	3	1	3	4	0.0000	.5025	-.9972	-1.0051	.1108	-.3909
3	3	3	3	2	0.0000	.5866	.1141	.5291	-.2003	.6709
3	3	3	3	4	0.7000	-.6172	-.2041	.9258	.1361	.9001
4	3	1	1	2	-1.4865	-.5946	0.0000	-.7598	-.4367	-.5105
4	3	3	1	2	.8583	1.2016	0.0000	-.5150	.4695	-.4681
4	3	3	1	4	-2.2599	.0000	0.0000	-.7533	.6868	.0342
4	3	1	3	2	0.0000	.3815	.9682	.9017	.0277	.6621
4	3	1	3	4	0.0000	-.6849	-.9561	-.4566	.2883	-.0484
4	3	3	3	2	0.0000	-.2247	-.6723	-.8490	-.2208	-.0265
4	3	3	3	4	0.0000	.4206	.0839	1.2617	-.0000	1.0036
5	3	1	1	2	0.0000	0.0000	0.0000	-.9309	-.3519	-.5818
5	3	3	1	2	0.0000	0.0000	0.0000	.5375	1.2189	-.3359
5	3	3	1	4	0.0000	0.0000	0.0000	-1.2019	.4543	-.3005
5	3	1	3	2	0.0000	0.0000	0.0000	-.4886	-.2873	.4751
5	3	1	3	4	0.0000	0.0000	0.0000	1.0926	.3614	.4249
5	3	3	3	2	0.0000	0.0000	0.0000	.2346	.1810	-.6842
5	3	3	3	4	0.0000	0.0000	0.0000	-.5032	-.2589	.7828
6	3	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6689
6	3	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3882
6	3	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.7752
6	3	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5462
6	3	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	1.0961
6	3	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.2622
6	3	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.5049

I ₂	I ₁	λ ₁	λ	λ ₂	L ₁ L'					
					1,1	1,2	1,3	2,2	2,3	3,3
3/2	7/2	1	1	2	0.0000	0.0000	0.0000	.4140	-1.0222	-.3450
3/2	7/2	3	1	2	0.0000	0.0000	0.0000	-.9710	-.5993	.0000
3/2	7/2	1	3	2	0.0000	0.0000	0.0000	.2173	-.1826	-.7043
3/2	7/2	3	3	2	0.0000	0.0000	0.0000	-.4238	.2289	.8240
5/2	7/2	1	1	2	.8299	-1.0541	0.0000	-.2543	-.7624	-.3996
5/2	7/2	3	1	2	-1.9463	.2247	0.0000	-.8218	-.3639	-.2163
5/2	7/2	3	1	4	.5803	-1.0051	0.0000	-.8382	.6893	.0645
5/2	7/2	1	3	2	0.0000	.2571	-.8888	-.8648	.1992	-.2259
5/2	7/2	1	3	4	0.0000	-.1000	.5378	.5003	-.2715	-.7183
5/2	7/2	3	3	2	0.0000	-.3923	.4588	1.0571	-.0059	.8809
5/2	7/2	3	3	4	0.0000	.1559	-.3353	-.7559	.2610	.6299
7/2	7/2	1	1	2	-.6023	-.8868	0.0000	-.5421	-.6407	-.4518
7/2	7/2	3	1	2	-1.0595	.7340	0.0000	-.7769	.0683	-.4174
7/2	7/2	3	1	4	-1.5238	-.3299	0.0000	-.7619	.6140	-.0346
7/2	7/2	1	3	2	0.0000	-.5872	.1888	.2424	.2398	.3074
7/2	7/2	1	3	4	0.0000	.5415	-.9163	-.9379	.0294	-.5637
7/2	7/2	3	3	2	0.0000	.5873	.1506	.4315	-.2145	.5558
7/2	7/2	3	3	4	0.0000	-.6293	-.0346	.7444	.1800	.8459
9/2	7/2	1	1	2	-1.4625	-.6455	0.0000	-.7407	-.5448	-.5128
9/2	7/2	3	1	2	.9354	1.2386	0.0000	-.4171	.6970	-.4819
9/2	7/2	3	1	4	-2.2485	-.1985	0.0000	-.9052	.4747	-.2044
9/2	7/2	1	3	2	0.0000	.3765	.9764	.8906	.0324	.6358
9/2	7/2	1	3	4	0.0000	-.6515	-1.0221	-.5751	.2573	-.2237
9/2	7/2	3	3	2	0.0000	-.2402	-.7287	-.8624	-.2058	-.1320
9/2	7/2	3	3	4	0.0000	.4248	.3283	1.1901	.0051	.9700
11/2	7/2	1	1	2	0.0000	0.0000	0.0000	-.9262	-.4152	-.5853
11/2	7/2	3	1	2	0.0000	0.0000	0.0000	.5924	1.2614	-.2604
11/2	7/2	3	1	4	0.0000	0.0000	0.0000	-1.2489	.2799	-.4598
11/2	7/2	1	3	2	0.0000	0.0000	0.0000	-.4862	-.2860	.4675
11/2	7/2	1	3	4	0.0000	0.0000	0.0000	1.0249	.3685	.3022
11/2	7/2	3	3	2	0.0000	0.0000	0.0000	.2586	.1944	-.6795
11/2	7/2	3	3	4	0.0000	0.0000	0.0000	-.5230	-.2735	.7174
13/2	7/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6699
13/2	7/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.4284
13/2	7/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.8251
13/2	7/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5463
13/2	7/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	1.0534
13/2	7/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.2909
13/2	7/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.5374

L ₁ L ₂									
I ₂	I ₁	A ₁	A	I ₂	L ₁	L ₂	L ₃	Z ₂	Z ₃
1	4	3	3	2	0.0000	0.0000	0.0000	0.0000	-0.2165
1	4	3	1	2	0.0000	0.0000	0.0000	0.0000	-0.4701
1	4	1	3	2	0.0000	0.0000	0.0000	0.0000	-0.1768
1	4	3	3	2	0.0000	0.0000	0.0000	0.0000	-0.3191
2	4	1	1	2	0.0000	0.0000	0.0000	-0.4880	-1.0722
2	4	3	1	2	0.0000	0.0000	0.0000	-1.0395	-0.3382
2	4	3	1	4	0.0000	0.0000	0.0000	-0.2039	-0.6548
2	4	1	3	2	0.0000	0.0000	0.0000	-0.2561	-0.2020
2	4	1	3	4	0.0000	0.0000	0.0000	-0.0633	-0.3335
2	4	3	3	2	0.0000	0.0000	0.0000	-0.4624	-0.2508
2	4	3	3	4	0.0000	0.0000	0.0000	-0.0854	-0.0758
3	4	1	1	2	-0.8839	-1.0607	0.0000	-0.1768	-0.8864
3	4	3	1	2	-1.9191	-0.3838	0.0000	-0.8956	-0.1166
3	4	3	1	4	-0.7319	-1.1711	0.0000	-0.7970	-0.2521
3	4	1	3	2	0.0000	-0.2681	-0.9047	-0.8660	-0.2887
3	4	1	3	4	0.0000	-0.1298	-0.6095	-0.6095	-0.2904
3	4	3	3	2	0.0000	-0.3909	-0.6125	-0.0031	-0.0111
3	4	3	3	4	0.0000	-0.1907	-0.4618	-0.8645	-0.2638
4	4	1	1	2	-0.5374	-0.9311	0.0000	-0.4955	-0.7502
4	4	3	1	2	-0.9546	-0.0595	0.0000	-0.7562	-0.4931
4	4	3	1	4	-1.3964	-0.5693	0.0000	-0.8524	-0.3111
4	4	1	3	2	0.0000	-0.5846	-0.1701	-0.2398	-0.2621
4	4	1	3	4	0.0000	-0.5674	-0.8397	-0.8681	-0.6377
4	4	3	3	2	0.0000	-0.5314	-0.1440	-0.3643	-0.2226
4	4	3	3	4	0.0000	-0.6357	-0.0588	-0.6176	-0.2057
5	4	1	1	2	-1.4422	-0.6861	0.0000	-0.7211	-0.6261
5	4	3	1	2	-0.9964	-1.2803	0.0000	-0.3321	-0.4658
5	4	3	1	4	-0.2279	-0.3523	0.0000	-0.9902	-0.2588
5	4	1	3	2	0.0000	-0.3744	-0.9815	-0.8632	-0.0365
5	4	1	3	4	0.0000	-0.6245	-1.0651	-0.5651	-0.3460
5	4	3	3	2	0.0000	-0.2521	-0.7111	-0.8697	-0.1933
5	4	3	3	4	0.0000	-0.4261	-0.4980	-1.1402	-0.0096
6	4	1	1	2	0.0000	0.0000	0.0000	-0.9211	-0.4652
6	4	3	1	2	0.0000	0.0000	0.0000	-0.6364	-1.2856
6	4	1	1	4	0.0000	0.0000	0.0000	-1.2774	-0.1290
6	4	3	1	4	0.0000	0.0000	0.0000	-0.4835	-0.4633
6	4	1	3	2	0.0000	0.0000	0.0000	-0.9706	-0.2022
6	4	1	3	4	0.0000	0.0000	0.0000	-0.2777	-0.6712
6	4	3	3	2	0.0000	0.0000	0.0000	-0.5349	-0.6686
7	4	1	1	2	0.0000	0.0000	0.0000	0.0000	-0.6696
7	4	3	1	2	0.0000	0.0000	0.0000	0.0000	-0.4626
7	4	1	1	4	0.0000	0.0000	0.0000	0.0000	-0.8593
7	4	3	1	4	0.0000	0.0000	0.0000	0.0000	-0.5467
7	4	1	3	2	0.0000	0.0000	0.0000	0.0000	-0.0162
7	4	1	3	4	0.0000	0.0000	0.0000	0.0000	-0.3140
7	4	3	3	2	0.0000	0.0000	0.0000	0.0000	-0.5600
7	4	3	3	4	0.0000	0.0000	0.0000	0.0000	-0.5600

I_2	I_1	λ_1	λ	λ_2	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
3/2	9/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3028
3/2	9/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6189
3/2	9/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.2472
3/2	9/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.4202
5/2	9/2	1	1	2	0.0000	0.0000	0.0000	.5394	-1.0887	-.1422
5/2	9/2	3	1	2	0.0000	0.0000	0.0000	-1.1027	-.1590	-.4611
5/2	9/2	3	1	4	0.0000	0.0000	0.0000	.3288	-.9478	-.5527
5/2	9/2	1	3	2	0.0000	0.0000	0.0000	.2832	-.2143	-.6667
5/2	9/2	1	3	4	0.0000	0.0000	0.0000	-.0844	.0887	.4745
5/2	9/2	3	3	2	0.0000	0.0000	0.0000	-.4413	.2630	.6227
5/2	9/2	3	3	4	0.0000	0.0000	0.0000	.1377	-.1158	-.6278
7/2	9/2	1	1	2	.9250	-1.0614	0.0000	-.1081	-.9644	-.3063
7/2	9/2	3	1	2	-1.8498	.5107	0.0000	-.9249	.0939	-.4993
7/2	9/2	3	1	4	.8498	-1.2753	0.0000	-.7174	-.1151	-.4194
7/2	9/2	1	3	2	0.0000	.2762	-.9163	-.8659	.1676	-.3286
7/2	9/2	1	3	4	0.0000	-.1541	.7252	.6802	-.2948	-.4695
7/2	9/2	3	3	2	0.0000	-.3885	.7110	.9717	-.0159	.7663
7/2	9/2	3	3	4	0.0000	.2134	-.5621	-.8935	.2520	.1725
9/2	9/2	1	1	2	-.4848	-.9627	0.0000	-.4545	-.8292	-.4091
9/2	9/2	3	1	2	-.8672	.9500	0.0000	-.7227	.4998	-.5257
9/2	9/2	3	1	4	-1.2828	-.7435	0.0000	-.8819	.0643	-.4128
9/2	9/2	1	3	2	0.0000	-.5877	.1545	.1856	.2399	.2249
9/2	9/2	1	3	4	0.0000	.5863	-.7714	-.8029	-.0743	-.6622
9/2	9/2	3	3	2	0.0000	.5874	.1667	.3154	-.2278	.4036
9/2	9/2	3	3	4	0.0000	-.6335	.1111	.5259	.2218	.6581
11/2	9/2	1	1	2	-1.4250	-.7113	0.0000	-.7023	-.6889	-.4956
11/2	9/2	3	1	2	1.0457	1.2710	0.0000	-.2592	.9775	-.4370
11/2	9/2	3	1	4	-2.2044	-.4756	0.0000	-1.0363	.0626	-.4919
11/2	9/2	1	3	2	0.0000	.3690	.9848	.8779	.0400	.6071
11/2	9/2	1	3	4	0.0000	-.6022	-1.0942	-.7188	.2316	-.4328
11/2	9/2	3	3	2	0.0000	-.2614	-.8038	-.8737	-.1829	-.2542
11/2	9/2	3	3	4	0.0000	.4260	.6200	1.1045	.0138	.8823
13/2	9/2	1	1	2	0.0000	0.0000	0.0000	-.9161	-.5057	-.5807
13/2	9/2	3	1	2	0.0000	0.0000	0.0000	.6722	1.2988	-.1344
13/2	9/2	3	1	4	0.0000	0.0000	0.0000	-1.2945	-.0000	-.6473
13/2	9/2	1	3	2	0.0000	0.0000	0.0000	-.4808	-.2839	.4612
13/2	9/2	1	3	4	0.0000	0.0000	0.0000	.9260	.3729	1.2000
13/2	9/2	3	3	2	0.0000	0.0000	0.0000	.2934	.2126	-.6617
13/2	9/2	3	3	4	0.0000	0.0000	0.0000	-.5421	-.2909	.6324
15/2	9/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6685
15/2	9/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.4906
15/2	9/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.8842
15/2	9/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5459
15/2	9/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.9839
15/2	9/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3331
15/2	9/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.5759

I ₂	I ₁	λ ₁	λ	λ ₂	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
2	5	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3585
2	5	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6982
2	5	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	.1344
2	5	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.2928
2	5	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.0563
2	5	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.4740
2	5	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.0875
3	5	1	1	2	0.0000	0.0000	0.0000	.5774	-1.0911	-.0722
3	5	3	1	2	0.0000	0.0000	0.0000	-1.1242	.0000	-.5621
3	5	3	1	4	0.0000	0.0000	0.0000	.4288	-1.1344	-.5360
3	5	1	3	2	0.0000	0.0000	0.0000	.3030	-.2227	-.6482
3	5	1	3	4	0.0000	0.0000	0.0000	-.1156	.1147	.5618
3	5	3	3	2	0.0000	0.0000	0.0000	-.4907	.2704	.5724
3	5	3	3	4	0.0000	0.0000	0.0000	.1795	-.1451	-.6982
4	5	1	1	2	.9573	-1.0595	0.0000	-.0532	-1.0168	-.2631
4	5	3	1	2	-1.8640	.5895	0.0000	-.9320	.2642	-.5582
4	5	3	1	4	.9439	-1.3432	0.0000	-.6293	-.4370	-.5039
4	5	1	3	2	0.0000	.2825	-.9252	-.8654	.1575	-.3559
4	5	1	3	4	0.0000	-.1743	.7838	.7350	-.2925	-.3557
4	5	3	3	2	0.0000	-.3859	.7778	.9491	-.0203	.7283
4	5	3	3	4	0.0000	.2361	-.6416	-.9222	.2410	.0304
5	5	1	1	2	-.4416	-.9859	0.0000	-.4189	-.8880	-.3850
5	5	3	1	2	-.7937	1.0173	0.0000	-.6852	.6473	-.5345
5	5	3	1	4	-1.1832	-.8806	0.0000	-.8798	-.1672	-.5060
5	5	1	3	2	0.0000	-.5814	.1414	.1664	.2397	.2034
5	5	1	3	4	0.0000	.6000	-.7115	-.7442	-.1579	-.6615
5	5	3	3	2	0.0000	.5872	.1642	.2783	-.2312	.3533
5	5	3	3	4	0.0000	-.6418	.1403	.4573	.2325	.5794
6	5	1	1	2	-1.4102	-.7385	0.0000	-.6849	-.7385	-.4835
6	5	3	1	2	1.0863	1.2801	0.0000	-.1965	1.0656	-.4035
6	5	3	1	4	-2.1807	-.5710	0.0000	-1.0592	-.1388	-.5711
6	5	1	3	2	0.0000	.3661	.9869	.8741	.0431	.5922
6	5	1	3	4	0.0000	-.5836	-1.1144	-.7642	.1783	-.4993
6	5	3	3	2	0.0000	-.2690	-.8297	-.8760	-.1742	-.2915
6	5	3	3	4	0.0000	.4251	.7102	1.0783	.0177	.8454
7	5	1	1	2	0.0000	0.0000	0.0000	-.9112	-.5331	-.5752
7	5	3	1	2	0.0000	0.0000	0.0000	.7019	1.3051	-.0834
7	5	3	1	4	0.0000	0.0000	0.0000	-1.3046	-.1133	-.7012
7	5	1	3	2	0.0000	0.0000	0.0000	-.4783	-.2830	.4603
7	5	1	3	4	0.0000	0.0000	0.0000	.8889	.3725	.0519
7	5	3	3	2	0.0000	0.0000	0.0000	.3063	.2130	-.6523
7	5	3	3	4	0.0000	0.0000	0.0000	-.5463	-.2962	.6054
8	5	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6673
8	5	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.5161
8	5	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.9017
8	5	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5449
8	5	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.9558
8	5	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3490
8	5	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.5873

I_2	I_1	λ_1	λ	λ_2	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
5/2	11/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3973
5/2	11/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.7443
5/2	11/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	.2219
5/2	11/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3248
5/2	11/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.0963
5/2	11/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5053
5/2	11/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.1445
7/2	11/2	1	1	2	0.0000	0.0000	0.0000	.6064	-1.0872	-.0167
7/2	11/2	3	1	2	0.0000	0.0000	0.0000	-1.1344	.1271	-.6233
7/2	11/2	3	1	4	0.0000	0.0000	0.0000	.5099	-1.2571	-.4847
7/2	11/2	1	3	2	0.0000	0.0000	0.0000	.3183	-.2289	-.6325
7/2	11/2	1	3	4	0.0000	0.0000	0.0000	-.1431	.1356	.6181
7/2	11/2	3	3	2	0.0000	0.0000	0.0000	-.4951	.2751	.5398
7/2	11/2	3	3	4	0.0000	0.0000	0.0000	.2135	-.1675	-.7308
9/2	11/2	1	1	2	.9833	-1.0563	0.0000	-.0084	-1.0524	-.2238
9/2	11/2	3	1	2	-1.8396	.6587	0.0000	-.9277	.4318	-.5902
9/2	11/2	3	1	4	1.0295	-1.3884	0.0000	-.5437	-.6337	-.5375
9/2	11/2	1	3	2	0.0000	.2875	-.9321	-.8646	.1496	-.3757
9/2	11/2	1	3	4	0.0000	-.1914	.8230	.7765	-.2871	-.2579
9/2	11/2	3	3	2	0.0000	-.3833	.8250	.9333	-.0243	.6988
9/2	11/2	3	3	4	0.0000	-.2516	-.7051	-.9398	.2301	-.0736
11/2	11/2	1	1	2	-.4054	-1.0035	0.0000	-.3880	-.9328	-.3619
11/2	11/2	3	1	2	-.7313	1.0687	0.0000	-.6477	.7637	-.5301
11/2	11/2	3	1	4	-1.0963	-.9841	0.0000	-.8614	-.3625	-.5612
11/2	11/2	1	3	2	0.0000	-.5804	.1303	.1513	.2397	.1832
11/2	11/2	1	3	4	0.0000	.6103	-.6592	-.6920	-.1336	-.6479
11/2	11/2	3	3	2	0.0000	.5871	.1592	.2492	-.2336	.3139
11/2	11/2	3	3	4	0.0000	-.6434	.1562	.4044	.2400	.5143
13/2	11/2	1	1	2	-1.3974	-.7584	0.0000	-.6690	-.7786	-.4711
13/2	11/2	3	1	2	1.1294	1.2837	0.0000	-.1426	1.1324	-.3692
13/2	11/2	3	1	4	-2.1578	-.6506	0.0000	-1.0583	-.2563	-.6239
13/2	11/2	1	3	2	0.0000	.3637	.9884	.8713	.0657	.5834
13/2	11/2	1	3	4	0.0000	-.5679	-1.1288	-.7990	.1579	-.5410
13/2	11/2	3	3	2	0.0000	-.2752	-.8505	-.8772	-.1668	-.3198
13/2	11/2	3	3	4	0.0000	.4238	.7786	1.0586	.0213	.8145
15/2	11/2	1	1	2	0.0000	0.0000	0.0000	-.9066	-.5670	-.5697
15/2	11/2	3	1	2	0.0000	0.0000	0.0000	.7269	1.3370	-.0389
15/2	11/2	3	1	4	0.0000	0.0000	0.0000	-1.3103	-.2048	-.7391
15/2	11/2	1	3	2	0.0000	0.0000	0.0000	-.4759	-.2521	.4602
15/2	11/2	1	3	4	0.0000	0.0000	0.0000	.8576	.3715	-.0054
15/2	11/2	3	3	2	0.0000	0.0000	0.0000	.3173	.2242	-.6433
15/2	11/2	3	3	4	0.0000	0.0000	0.0000	-.5485	-.3002	.5852
17/2	11/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6658
17/2	11/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.5339
17/2	11/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.9143
17/2	11/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5436
17/2	11/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.9311
17/2	11/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3624
17/2	11/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.5955

										L ₁ L ₁ '					
										1,1	1,2	1,3	2,2	2,3	3,3
I ₂	I ₁	A ₁	A	A ₂											
3	6	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.4270
3	6	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.7724
3	6	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.2945
3	6	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3486
3	6	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.1330
3	6	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5244
3	6	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.1913
4	6	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.0281
4	6	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6607
4	6	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.4223
4	6	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6193
4	6	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6851
4	6	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5175
4	6	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.7442
5	6	1	1	2	1.0048	-1.0525	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.1914
5	6	3	1	2	-1.8177	-.1140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6053
5	6	3	1	4	1.0839	-1.4191	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5413
5	6	1	3	2	0.0000	-.2916	-.9376	-.8639	-.1432	-.1432	-.2802	-.2802	-.1747	-.2802	-.3907
5	6	1	3	4	0.0000	-.3059	-.6646	-.8087	-.9213	-.0279	-.0279	-.0279	-.6759	-.0279	-.6759
5	6	3	3	2	0.0000	-.3809	-.6594	-.8594	-.9213	-.0279	-.0279	-.0279	-.6759	-.0279	-.6759
5	6	3	3	4	0.0000	-.2641	-.7564	-.9509	-.2201	-.9509	-.2201	-.2201	-.1513	-.2201	-.1513
6	6	1	1	2	-.3746	-1.0172	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3405
6	6	3	1	2	-6.776	1.1088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5184
6	6	3	1	4	-1.0232	-1.0656	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5913
6	6	1	3	2	0.0000	-.5796	-.1207	-.1362	-.1362	-.1362	-.2336	-.2336	-.1668	-.2336	-.1668
6	6	1	3	4	0.0000	-.8185	-.6135	-.6658	-.1543	-.6658	-.1543	-.1543	-.6279	-.1543	-.6279
6	6	3	3	2	0.0000	-.5869	-.1532	-.2258	-.2353	-.2258	-.2353	-.2353	-.2823	-.2353	-.2823
6	6	3	3	4	0.0000	-.6445	-.1640	-.3625	-.2454	-.3625	-.2454	-.2454	-.4606	-.2454	-.4606
7	6	1	1	2	-1.3062	-.7769	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5589
7	6	3	1	2	1.1494	1.2850	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3360
7	6	3	1	4	-2.1363	-.7165	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5583
7	6	1	3	2	0.0000	-.3615	-.9893	-.8691	-.0481	-.8691	-.5743	-.5743	-.7763	-.5743	-.7763
7	6	1	3	4	0.0000	-.5544	-1.1332	-.8264	-.1400	-.8264	-.1400	-.1400	-.5419	-.1400	-.5419
7	6	3	3	2	0.0000	-.2804	-.8674	-.8778	-.1605	-.8778	-.1605	-.1605	-.3419	-.1605	-.3419
7	6	3	3	4	0.0000	-.2223	-.8317	1.0435	0.2447	1.0435	0.2447	0.2447	1.0887	0.2447	1.0887
8	6	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.5640
8	6	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3507
8	6	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.9234
8	6	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.4423
8	6	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.9093
8	6	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3733
8	6	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6014
9	6	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6642
9	6	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3507
9	6	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.9234
9	6	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.4423
9	6	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.9093
9	6	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.3733
9	6	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-.6014

I ₂	I ₁	A ₁	A	A ₂	L.T.					
					1.1	1.2	1.3	2.2	2.3	3.3
7/2	13/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-6494
7/2	13/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-7900
7/2	13/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-3551
7/2	13/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-3669
7/2	13/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-1649
7/2	13/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-5363
7/2	13/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-2313
9/2	13/2	1	1	2	0.0000	0.0000	0.0000	-1.0728	-1.0728	-0648
9/2	13/2	3	1	4	0.0000	0.0000	0.0000	-1.1368	-1.1368	-6833
9/2	13/2	3	1	4	0.0000	0.0000	0.0000	6.117	-1.3949	-3580
9/2	13/2	1	3	4	0.0000	0.0000	0.0000	3400	-2372	-6082
9/2	13/2	1	3	4	0.0000	0.0000	0.0000	-1886	1670	6793
9/2	13/2	1	3	2	0.0000	0.0000	0.0000	-4970	2801	3023
9/2	13/2	3	3	4	0.0000	0.0000	0.0000	2645	-1987	-1745
11/2	13/2	1	1	2	-1.0228	-1.0485	0.0000	0.0599	-1.0956	-1622
11/2	13/2	3	1	2	-1.7981	0.7590	0.0000	-9045	6058	-6115
11/2	13/2	3	1	4	1.1372	-1.4401	0.0000	-3929	-9505	-5294
11/2	13/2	1	3	2	0.0000	0.2950	-9421	6633	1350	-6024
11/2	13/2	1	3	4	0.0000	-2164	8938	8341	-2729	-1044
11/2	13/2	1	3	4	0.0000	-3786	8633	9132	-0311	6575
11/2	13/2	3	3	2	0.0000	2744	-7984	-9581	2110	-2104
13/2	13/2	3	3	4	-3481	-1.0280	0.0000	-3372	-9957	-3209
13/2	13/2	1	1	2	-6311	1.1407	0.0000	-5765	9323	-5032
13/2	13/2	3	1	2	-9533	-1.1308	0.0000	-3044	-6624	-6046
13/2	13/2	3	1	4	0.0000	-5789	0.0000	1275	2395	-1532
13/2	13/2	1	3	2	0.0000	6247	-5733	-6048	-1706	-6050
13/2	13/2	1	3	4	0.0000	5868	1469	2066	-2266	-2565
13/2	13/2	3	3	2	0.0000	-6453	1668	3285	2495	4162
15/2	13/2	1	1	2	-1.3763	-7889	0.0000	-6415	-8389	-4474
15/2	13/2	3	1	2	1.1743	1.2849	0.0000	-0549	1.2242	-3046
15/2	13/2	3	1	4	-2.1163	-7719	0.0000	-1.0629	-4916	-6799
15/2	13/2	1	3	2	0.0000	3597	9889	8673	0502	-5704
15/2	13/2	1	3	4	0.0000	-5427	-1.1469	-8483	1243	-6002
15/2	13/2	3	3	2	0.0000	-2848	-8814	-1551	-1251	-3593
15/2	13/2	3	3	4	0.0000	4207	8735	1.0318	0279	7672
17/2	13/2	1	1	2	0.0000	0.0000	0.0000	-8984	-6111	-5583
17/2	13/2	3	1	2	0.0000	0.0000	0.0000	7665	1.3035	0341
17/2	13/2	3	1	4	0.0000	0.0000	0.0000	-1.3129	-3572	-7840
17/2	13/2	1	3	2	0.0000	0.0000	0.0000	-4716	-2837	-6611
17/2	13/2	1	3	4	0.0000	0.0000	0.0000	8077	3656	-0954
17/2	13/2	3	3	2	0.0000	0.0000	0.0000	3345	-6273	-5673
17/2	13/2	3	3	4	0.0000	0.0000	0.0000	-5997	-3354	5582
19/2	13/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-6626
19/2	13/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-5653
19/2	13/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-9299
19/2	13/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-5417
19/2	13/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-8899
19/2	13/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-3839
19/2	13/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-6057

I ₂	I ₁	λ ₁	λ	λ ₂	-35- L ₁ L'					
					1,1	1,2	1,3	2,2	2,3	3,3
4	7	1	1	2	0.0330	0.0000	0.0000	0.0000	0.0000	.4671
4	7	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.8012
4	7	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	.4057
4	7	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3814
4	7	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.1931
4	7	3	3	2	0.0070	0.0000	0.0000	0.0000	0.0300	-.5440
4	7	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.2643
5	7	1	1	2	0.0000	0.0000	0.0000	.6630	-1.0646	.0953
5	7	3	1	2	0.0000	0.0000	0.0000	-1.1372	.3845	-.4964
5	7	3	1	4	0.0000	0.0000	0.0000	.6781	-1.4324	-.2967
5	7	1	3	2	0.0000	0.0000	0.0000	.3480	-.2432	-.5984
5	7	1	3	4	0.0000	0.0000	0.0000	-.2075	.1790	.6967
5	7	3	3	2	0.0000	0.0000	0.0000	-.4963	.2514	.4922
5	7	3	3	4	0.0000	0.0000	0.0000	.7839	-.2100	-.7453
6	7	1	1	2	1.0381	-1.0445	0.0030	.0865	-1.1388	-.1366
6	7	3	1	2	-1.7806	.7963	0.0000	-.8903	.6823	-.6112
6	7	3	1	4	1.1827	-1.4545	0.0000	-.3285	-1.0615	-.5087
6	7	1	3	2	0.0000	.2978	-.9458	-.6627	.1336	-.4117
6	7	1	3	4	0.0000	-.2293	.9176	.8545	-.2656	.0437
6	7	3	3	2	0.0000	-.3765	.9052	.9065	-.0341	.6423
6	7	3	3	4	0.0000	.2830	-.8330	-.9629	.2329	-.2564
7	7	1	1	2	-.3251	-1.0368	0.0000	-.3163	-1.0182	-.3031
7	7	3	1	2	-.5735	1.1665	0.0000	-.5478	.9941	-.4861
7	7	3	1	4	-.8943	-1.1837	0.0000	-.7729	-.7772	-.6077
7	7	1	3	2	0.0000	-.5784	.1052	.1184	.2395	.1417
7	7	1	3	4	0.0000	.6298	-.5378	-.5684	-.1939	-.5812
7	7	3	3	2	0.0000	.5866	.1405	.1905	-.2377	.2353
7	7	3	3	4	0.0030	-.6458	.1667	.3005	.2526	.3791
8	7	1	1	2	-1.3676	-.8008	0.0000	-.6295	-.8620	-.4364
8	7	3	1	2	-1.1959	1.2838	0.0000	-.0190	1.2563	-.2754
8	7	3	1	4	-2.0978	-.8189	0.0000	-1.0544	-.5854	-.6925
8	7	1	3	2	0.0000	.3581	.9904	.8660	.0520	.5651
8	7	1	3	4	0.0000	-.5325	-1.1526	-.8661	.1103	-.6194
8	7	3	3	2	0.0000	-.2886	-.8932	-.8782	-.1504	-.3739
8	7	3	3	4	0.0000	.4191	.9071	1.0225	.0338	.7493
9	7	1	1	2	0.0000	0.0000	0.0000	-.8948	-.6288	-.5529
9	7	3	1	2	0.0000	0.0000	0.0000	.7825	1.2998	.0643
9	7	3	1	4	0.0000	0.0000	0.0000	-1.3119	-.4191	-.7965
9	7	1	3	2	0.0000	0.0000	0.0000	-.4597	-.2801	.4611
9	7	1	3	4	0.0000	0.0000	0.0000	.7875	.3668	-.1312
9	7	3	3	2	0.0000	0.0000	0.0000	.3415	.2354	-.6204
9	7	3	3	4	0.0000	0.0000	0.0000	-.5493	-.3071	.5493
10	7	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6610
10	7	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5780
10	7	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.9346
10	7	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5397
10	7	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.8727
10	7	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3924
10	7	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.6089

I_2	I_1	λ_1	λ	λ_2	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
9/2	15/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.4815
9/2	15/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.4883
9/2	15/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	.4484
9/2	15/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.3931
9/2	15/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.2181
9/2	15/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5489
9/2	15/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.2921
11/2	15/2	1	1	2	0.0000	0.0000	0.0000	.6758	-1.0566	.1211
11/2	15/2	3	1	2	0.0000	0.0000	0.0000	-1.1345	-.4435	-.7038
11/2	15/2	3	1	4	0.0000	0.0000	0.0000	.7175	-1.4585	-.2398
11/2	15/2	1	3	2	0.0000	0.0000	0.0000	.1247	-.2426	-.5909
11/2	15/2	1	3	4	0.0000	0.0000	0.0000	-.2243	.1893	.7063
11/2	15/2	3	3	2	0.0000	0.0000	0.0000	-.4952	.2823	.4850
11/2	15/2	3	3	4	0.0000	0.0000	0.0000	.3004	-.2132	-.7404
13/2	15/2	1	1	2	-1.0512	-1.0407	0.0000	.1094	-1.1196	-.1142
13/2	15/2	3	1	2	-1.7646	.8276	0.0000	-.8758	.7465	-.6043
13/2	15/2	3	1	4	1.2218	-1.4663	0.0000	-.2709	-1.1506	-.4828
13/2	15/2	1	3	2	0.0000	.3083	-.9430	-.6622	.1298	-.4194
13/2	15/2	1	3	4	0.0000	-.2388	.9374	.8712	-.2584	.0081
13/2	15/2	3	3	2	0.0000	-.3766	.9208	.9015	-.0368	.6307
13/2	15/2	3	3	4	0.0000	-.2903	-.8620	-.9661	.1358	-.2929
15/2	15/2	1	1	2	-.3050	-1.0439	0.0000	-.2977	-1.0366	-.2868
15/2	15/2	3	1	2	-.5547	1.1876	0.0000	-.5195	1.0454	-.4684
15/2	15/2	3	1	4	-.8418	-1.2273	0.0000	-.7416	-.8740	-.6034
15/2	15/2	1	3	2	0.0000	-.5760	.0988	-.1105	.2394	.1319
15/2	15/2	1	3	4	0.0000	.6339	-.5358	-.5358	-.1949	-.5575
15/2	15/2	3	3	2	0.0000	.5865	.1343	.1768	-.2385	.2170
15/2	15/2	3	3	4	0.0000	-.6463	.1648	.2770	.2550	.3478
17/2	15/2	1	1	2	-1.3598	-.8111	0.0000	-.6187	-.8817	-.4262
17/2	15/2	3	1	2	1.2149	1.2821	0.0000	-.0128	1.2815	-.2485
17/2	15/2	3	1	4	-2.0808	-.8592	0.0000	-1.0440	-.6667	-.6988
17/2	15/2	1	3	2	0.0000	.3566	.9906	.8648	.0537	.5610
17/2	15/2	1	3	4	0.0000	-.5235	-.11568	-.8807	-.0979	-.6339
17/2	15/2	3	3	2	0.0000	-.2919	-.9032	-.4781	-.1462	-.3857
17/2	15/2	3	3	4	0.0000	.4175	.9344	1.0149	.0335	.7337
19/2	15/2	1	1	2	0.0000	0.0000	0.0000	-.8314	-.6443	-.5476
19/2	15/2	3	1	2	0.0000	0.0000	0.0000	.7964	1.2953	.0910
19/2	15/2	3	1	4	0.0000	0.0000	0.0000	-1.3101	-.4735	-.8048
19/2	15/2	1	3	2	0.0000	0.0000	0.0000	-.4679	-.2795	.4627
19/2	15/2	1	3	4	0.0000	0.0000	0.0000	.7697	.3651	-.1625
19/2	15/2	3	3	2	0.0000	0.0000	0.0000	.3476	.2382	-.6141
19/2	15/2	3	3	4	0.0000	0.0000	0.0000	-.3486	-.3084	.5425
21/2	15/2	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6594
21/2	15/2	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5892
21/2	15/2	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.9379
21/2	15/2	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5304
21/2	15/2	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.8571
21/2	15/2	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.4000
21/2	15/2	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.6109

I ₂	I ₁	λ ₁	λ	λ ₂	L, L'					
					1,1	1,2	1,3	2,2	2,3	3,3
5	8	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.4933
5	8	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.8128
5	8	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	.4847
5	8	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.4028
5	8	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.2402
5	8	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5513
5	8	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.3157
6	8	1	1	2	0.0000	0.0000	0.0000	.6866	-1.0488	.1430
6	8	3	1	2	0.0000	0.0000	0.0000	-1.1312	.4937	-.7073
6	8	3	1	4	0.0000	0.0000	0.0000	.7513	-1.4756	-.1878
6	8	1	3	2	0.0000	0.0000	0.0000	.3504	-.2447	-.5840
6	8	1	3	4	0.0000	0.0000	0.0000	-.2394	.1981	.7137
6	8	3	3	2	0.0000	0.0000	0.0000	-.4937	.2828	.4803
6	8	3	3	4	0.0000	0.0000	0.0000	.3146	-.2263	-.7341
7	8	1	1	2	1.0626	-1.0370	0.0000	.1293	-1.1259	-.0943
7	8	3	1	2	-1.7507	.8542	0.0000	-.8614	.8010	-.6003
7	8	3	1	4	1.2559	-1.4707	0.0000	-.2193	-1.2223	-.4549
7	8	1	3	2	0.0000	.3024	-.9516	-.8617	.1266	-.4259
7	8	1	3	4	0.0000	-.2473	.9542	-.8849	-.2516	.0528
7	8	3	3	2	0.0000	-.3728	.9333	.8975	-.0392	.6205
7	8	3	3	4	0.0000	.2965	-.8865	-.9682	.1894	-.3223
8	8	1	1	2	-.2872	-1.0498	0.0000	-.2811	-1.0519	-.2721
8	8	3	1	2	-.5229	1.2051	0.0000	-.4935	1.0883	-.4508
8	8	3	1	4	-.7949	-1.2635	0.0000	-.7113	-.9563	-.5947
8	8	1	3	2	0.0000	-.5777	.0932	.1037	.2394	.1234
8	8	1	3	4	0.0000	.6374	-.4780	-.5065	-.2043	-.5347
8	8	3	3	2	0.0000	.5864	.1285	.1650	-.2391	.2015
8	8	3	3	4	0.0000	-.6466	.1617	.2569	.2569	.3212
9	8	1	1	2	-1.3528	-.8201	0.0000	-.6088	-.8986	-.4167
9	8	3	1	2	-1.2317	1.2800	0.0000	.0411	1.3021	-.2235
9	8	3	1	4	-2.0651	-.8942	0.0000	-1.0325	-.7375	-.7007
9	8	1	3	2	0.0000	.3553	.9907	.8639	.0552	.5572
9	8	1	3	4	0.0000	-.5155	-1.1599	-.8923	.0858	-.6443
9	8	3	3	2	0.0000	-.2948	-.9117	-.8780	-1.1426	-.3957
9	8	3	3	4	0.0000	.4160	.9568	1.0088	.0360	.7205
10	8	1	1	2	0.0000	0.0000	0.0000	-.8883	-.6580	-.5425
10	8	3	1	2	0.0000	0.0000	0.0000	.8088	1.2904	.1143
10	8	3	1	4	0.0000	0.0000	0.0000	-1.3077	-.5216	-.8093
10	8	1	3	2	0.0000	0.0000	0.0000	-.4663	-.2790	.4635
10	8	1	3	4	0.0000	0.0000	0.0000	.7539	.3633	-.1899
10	8	3	3	2	0.0000	0.0000	0.0000	.3530	.2435	-.6083
10	8	3	3	4	0.0000	0.0000	0.0000	-.5476	-.3094	.5372
11	8	1	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.6580
11	8	3	1	2	0.0000	0.0000	0.0000	0.0000	0.0000	.5993
11	8	3	1	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.9402
11	8	1	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	-.5372
11	8	1	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	.8431
11	8	3	3	2	0.0000	0.0000	0.0000	0.0000	0.0000	.4067
11	8	3	3	4	0.0000	0.0000	0.0000	0.0000	0.0000	-.6124

Table IV. Generalized F-coefficients $F_{\lambda}^{\lambda_2 \lambda_1}(LL'I_2 I_1)$
for $\lambda_1 + \lambda + \lambda_2 = \text{odd}$

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
3/2	1/2	1	2	2	-1.4142	0.0000	0.0000
5/2	1/2	1	2	2	0.0000	0.0000	-0.9258
5/2	1/2	1	4	4	0.0000	0.0000	1.4639
<hr/>							
I_2	I_1	λ_1	λ	λ_2	1,2	1,3	2,3
1	1	2	1	2	-0.4743	0.0000	0.0000
1	1	1	2	2	-1.0607	0.0000	0.0000
1	1	2	3	2	0.9487	0.0000	0.0000
2	1	2	1	2	1.2550	0.0000	-0.7171
2	1	1	2	2	-0.9354	-0.5976	-0.8018
2	1	2	3	2	-0.1195	-1.3363	-0.3586
2	1	2	3	4	1.1339	-0.6339	0.0945
2	1	1	4	4	0.0000	-1.0979	0.8183
3	1	2	1	2	0.0000	0.0000	1.2421
3	1	1	2	2	0.0000	0.0000	-0.6944
3	1	2	3	2	0.0000	0.0000	-0.1035
3	1	2	3	4	0.0000	0.0000	-0.4955
3	1	1	4	4	0.0000	0.0000	0.8583
<hr/>							
I_2	I_1	λ_1	λ	λ_2	1,2	1,3	2,3
3/2	3/2	2	1	2	0.9798	0.0000	-0.8000
3/2	3/2	1	2	2	-0.5657	-0.8944	-0.6928
3/2	3/2	3	2	2	-1.2961	-0.5835	0.3024
3/2	3/2	2	3	2	0.4899	0.0000	-0.4000
3/2	3/2	3	4	2	0.0000	0.9258	1.1952
5/2	3/2	2	1	2	1.2000	0.0000	0.8857
5/2	3/2	1	2	2	-0.6928	-0.5835	-0.6433
5/2	3/2	3	2	2	0.3024	1.2139	-0.8441
5/2	3/2	3	2	4	-1.8516	0.7825	0.5952
5/2	3/2	2	3	2	-0.1143	-1.0564	-0.1929
5/2	3/2	2	3	4	0.6999	1.0351	-0.3499
5/2	3/2	1	4	4	0.0000	-0.4944	0.1956
5/2	3/2	3	4	2	0.0000	-0.1515	-0.3642
5/2	3/2	3	4	4	0.0000	-0.6125	1.5605
7/2	3/2	2	1	2	0.0000	0.0000	1.2778
7/2	3/2	1	2	2	0.0000	0.0000	-0.5533
7/2	3/2	3	2	2	0.0000	0.0000	0.2415
7/2	3/2	3	2	4	0.0000	0.0000	-0.9809
7/2	3/2	2	3	2	0.0000	0.0000	0.1065
7/2	3/2	2	3	4	0.0000	0.0000	-0.4325
7/2	3/2	1	4	4	0.0000	0.0000	0.3803
7/2	3/2	3	4	2	0.0000	0.0000	0.0636
7/2	3/2	3	4	4	0.0000	0.0000	-0.2806

and the injection volume was large, more than 20 peaks have been analyzed, with good resolution of most peaks, in a total time of 1000 minutes. I conclude that: (1) A recycle system of 4-way-valves and columns allows permutation to be made in the order of columns in a series. These permutations may be useful by themselves in addition to allowing peaks to be recycled and center cuts to be made. In addition, this system of 4-way-valves may shorten the time required for a particular analysis. (The long time required for the analysis shown here was due to the large injection volume.) (2) Stop flow chromatography is a useful technique if the accompanying increase in FWHM can be tolerated. (3) Stepwise inlet pressure programming can be used to maintain a constant flow rate through the detector when a column is removed from the series in stop-flow chromatography. Stepwise pressure programming is additionally advantageous because it allows utilization of powerful stepwise temperature programming techniques.

Therefore, I propose a new gas-chromatographic system that has broad application.

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
3/2	5/2	2	1	2	1.2000	0.0000	.6057
3/2	5/2	1	2	2	.2828	-.9562	-.2424
3/2	5/2	3	2	2	-1.3856	.2926	-.6681
3/2	5/2	2	3	2	-.1143	1.0564	-.1929
3/2	5/2	4	3	2	.6999	-1.0351	-.3499
3/2	5/2	3	4	2	0.0000	-.4629	.7825
5/2	5/2	2	1	2	1.1143	0.0000	1.0100
5/2	5/2	4	1	4	.5249	0.0000	-1.3745
5/2	5/2	1	2	2	-.2424	-.7526	-.3571
5/2	5/2	3	2	2	-.6681	.8708	-.6803
5/2	5/2	3	2	4	-1.2122	-.2091	-.4629
5/2	5/2	2	3	2	.2510	-.0000	-.1964
5/2	5/2	2	3	4	-.2250	1.2677	-.1336
5/2	5/2	4	3	2	-.2250	-1.2677	-.1336
5/2	5/2	4	3	4	.9138	-.0000	-.3619
5/2	5/2	1	4	4	0.0000	.2645	-.3137
5/2	5/2	3	4	2	0.0000	.5170	.2988
5/2	5/2	3	4	4	0.0000	-.8042	.8092
7/2	5/2	2	1	2	.9583	0.0000	1.1830
7/2	5/2	4	1	4	1.5571	0.0000	-.3203
7/2	5/2	1	2	2	-.4518	-.4829	-.4182
7/2	5/2	3	2	2	.3689	1.1337	-.2988
7/2	5/2	3	2	4	-1.4983	-.4004	-.8092
7/2	5/2	2	3	2	-.0913	-.7470	-.0863
7/2	5/2	2	3	4	.3707	1.2138	-.2336
7/2	5/2	4	3	2	.0373	.4880	.1409
7/2	5/2	4	3	4	-.1643	-1.3446	-.3623
7/2	5/2	1	4	4	0.0000	-.3799	-.3731
7/2	5/2	3	4	2	0.0000	-.1559	-.3150
7/2	5/2	3	4	4	0.0000	.4868	.8101
9/2	5/2	2	1	2	0.0000	0.0000	1.1025
9/2	5/2	4	1	4	0.0000	0.0000	1.4569
9/2	5/2	1	2	2	0.0000	0.0000	-.3912
9/2	5/2	3	2	2	0.0000	0.0000	.3194
9/2	5/2	3	2	4	0.0000	0.0000	-1.0514
9/2	5/2	2	3	2	0.0000	0.0000	.0922
9/2	5/2	2	3	4	0.0000	0.0000	-.3035
9/2	5/2	4	3	2	0.0000	0.0000	-.0376
9/2	5/2	4	3	4	0.0000	0.0000	.1345
9/2	5/2	1	4	4	0.0000	0.0000	.3325
9/2	5/2	3	4	2	0.0000	0.0000	.0842
9/2	5/2	3	4	4	0.0000	0.0000	-.3007

L, L'							
I_2	I_1	λ_1	λ	λ_2	1,2	1,3	2,3
1	3	2	1	2	0.0000	0.0000	1.2421
1	3	1	2	2	0.0000	0.0000	.2315
1	3	3	2	2	0.0000	0.0000	-.9820
1	3	2	3	2	0.0000	0.0000	.1035
1	3	4	3	2	0.0000	0.0000	-.4955
1	3	3	4	2	0.0000	0.0000	-.2588
2	3	2	1	2	1.0757	0.0000	1.0861
2	3	4	1	4	1.3296	0.0000	-1.4214
2	3	1	2	2	.2673	-.7825	-.1071
2	3	3	2	2	-1.1339	.5533	-.8081
2	3	3	2	4	.2988	-1.1664	-.7187
2	3	2	3	2	-.1024	.8748	-.1225
2	3	2	3	4	.0270	-.3919	.1305
2	3	4	3	2	.4904	-1.2564	-.3058
2	3	4	3	4	-.1403	1.1979	-.4228
2	3	1	4	4	0.0000	-.0399	.1094
2	3	3	4	2	0.0000	-.3645	.5324
2	3	3	4	4	0.0000	.1529	-.4188
3	3	2	1	2	1.0277	0.0000	1.1554
3	3	4	1	4	1.1619	0.0000	-.5855
3	3	1	2	2	-.1768	-.6682	-.2573
3	3	3	2	2	-.5000	.9449	-.5984
3	3	3	2	4	-.9574	-.7237	-.7237
3	3	2	3	2	.2033	.0000	-.1527
3	3	2	3	4	-.2163	1.0013	-.0477
3	3	4	3	2	-.2163	-1.0013	-.0477
3	3	4	3	4	.6947	-.0000	-.4144
3	3	1	4	4	0.0000	.2478	-.2478
3	3	3	4	2	0.0000	.4233	.1909
3	3	3	4	4	0.0000	-.6901	.5175
4	3	2	1	2	.8583	0.0000	1.1737
4	3	4	1	4	1.5834	0.0000	.4812
4	3	1	2	2	-.3838	-.4374	-.3499
4	3	3	2	2	.3619	1.0310	-.1856
4	3	3	2	4	-1.3048	-.5940	-.8921
4	3	2	3	2	-.0817	-.6521	-.0652
4	3	2	3	4	.2947	1.1167	-.1763
4	3	4	3	2	.0427	.5193	.1334
4	3	4	3	4	-.1671	-1.3327	-.2687
4	3	1	4	4	0.0000	-.3054	-.1018
4	3	3	4	2	0.0000	-.1467	-.2771
4	3	3	4	4	0.0000	.4255	.6380
5	3	2	1	2	0.0000	0.0000	1.0157
5	3	4	1	4	0.0000	0.0000	1.5914
5	3	1	2	2	0.0000	0.0000	-.3407
5	3	3	2	2	0.0000	0.0000	.3212
5	3	3	2	4	0.0000	0.0000	-.9835
5	3	2	3	2	0.0000	0.0000	.0046
5	3	2	3	4	0.0000	0.0000	-.2592
5	3	4	3	2	0.0000	0.0000	-.0442
5	3	4	3	4	0.0000	0.0000	.1469
5	3	1	4	4	0.0000	0.0000	.2643
5	3	3	4	2	0.0000	0.0000	.0846
5	3	3	4	4	0.0000	0.0000	-.2813

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
3/2	7/2	2	1	2	0.0000	0.0000	1.2778
3/2	7/2	1	2	2	0.0000	0.0000	.2474
3/2	7/2	3	2	2	0.0000	0.0000	-.9476
3/2	7/2	2	3	2	0.0000	0.0000	.1065
3/2	7/2	4	3	2	0.0000	0.0000	-.4325
3/2	7/2	3	4	2	0.0000	0.0000	-.2497
5/2	7/2	2	1	2	.9583	0.0000	1.1630
5/2	7/2	4	1	4	1.5571	0.0000	-.3203
5/2	7/2	1	2	2	.2474	-.6613	-.0382
5/2	7/2	3	2	2	-.9476	.6331	-.7076
5/2	7/2	3	2	4	.3869	-1.3441	-.6268
5/2	7/2	2	3	2	-.0913	.7470	-.0863
5/2	7/2	2	3	4	.0373	-.4880	.1409
5/2	7/2	4	3	2	.3707	-1.2138	-.2336
5/2	7/2	4	3	4	-.1643	1.3446	-.3623
5/2	7/2	1	4	4	0.0000	-.0523	.1308
5/2	7/2	3	4	2	0.0000	-.3003	.4046
5/2	7/2	3	4	4	0.0000	.1848	-.4482
7/2	7/2	2	1	2	.9390	0.0000	1.1740
7/2	7/2	4	1	4	1.4055	0.0000	.2140
7/2	7/2	1	2	2	-.1347	-.5969	-.2968
7/2	7/2	3	2	2	-.3869	.9352	-.5040
7/2	7/2	3	2	4	-.7619	-.9516	-.7444
7/2	7/2	2	3	2	.1714	.0000	-.1246
7/2	7/2	2	3	4	-.2018	.7968	.0000
7/2	7/2	4	3	2	-.2018	-.7968	-.0000
7/2	7/2	4	3	4	.5595	.0000	-.3790
7/2	7/2	1	4	4	0.0000	.2277	-.1972
7/2	7/2	3	4	2	0.0000	.3615	.1328
7/2	7/2	3	4	4	0.0000	-.6000	.3549
9/2	7/2	2	1	2	.7746	0.0000	1.1260
9/2	7/2	4	1	4	1.5374	0.0000	.9732
9/2	7/2	1	2	2	-.3333	-.3984	-.2989
9/2	7/2	3	2	2	.3482	.9363	-.1087
9/2	7/2	3	2	4	-1.1459	-.6848	-.8765
9/2	7/2	2	3	2	-.0738	-.5780	-.0518
9/2	7/2	2	3	4	.2428	1.0157	-.1345
9/2	7/2	4	3	2	.0454	.5223	.1216
9/2	7/2	4	3	4	-.1622	-1.2723	-.2304
9/2	7/2	1	4	4	0.0000	-.2539	-.1121
9/2	7/2	3	4	2	0.0000	-.1371	-.2460
9/2	7/2	3	4	4	0.0000	.3754	.5259
11/2	7/2	2	1	2	0.0000	0.0000	.9342
11/2	7/2	4	1	4	0.0000	0.0000	1.6262
11/2	7/2	1	2	2	0.0000	0.0000	-.3015
11/2	7/2	3	2	2	0.0000	0.0000	.3149
11/2	7/2	3	2	4	0.0000	0.0000	-.9091
11/2	7/2	2	3	2	0.0000	0.0000	.0778
11/2	7/2	2	3	4	0.0000	0.0000	-.2247
11/2	7/2	4	3	2	0.0000	0.0000	-.0479
11/2	7/2	4	3	4	0.0000	0.0000	.1501
11/2	7/2	1	4	4	0.0000	0.0000	.2247
11/2	7/2	3	4	2	0.0000	0.0000	.0830
11/2	7/2	3	4	4	0.0000	0.0000	-.2600

I ₂	I ₁	λ ₁	λ	λ ₂	L, L'		
					1,2	1,3	2,3
2	4	2	1	2	0.0000	0.0000	1.2013
2	4	4	1	4	0.0000	0.0000	1.1184
2	4	1	2	2	0.0000	0.0000	.2396
2	4	3	2	2	0.0000	0.0000	-.8495
2	4	3	2	4	0.0000	0.0000	.2239
2	4	2	3	2	0.0000	0.0000	.1001
2	4	2	3	4	0.0000	0.0000	-.0204
2	4	4	3	2	0.0000	0.0000	-.3609
2	4	4	3	4	0.0000	0.0000	.1032
2	4	1	4	4	0.0000	0.0000	-.0163
2	4	3	4	2	0.0000	0.0000	-.2239
2	4	3	4	4	0.0000	0.0000	.0640
3	4	2	1	2	.8503	0.0000	1.1737
3	4	4	1	4	1.5834	0.0000	.4812
3	4	1	2	2	.2282	-.5722	.0000
3	4	3	2	2	-.8092	.16455	-.6916
3	4	3	2	4	.4226	-1.3484	-.4816
3	4	2	3	2	-.0817	.6521	-.0652
3	4	2	3	4	.0427	-.5143	.1334
3	4	4	3	2	.2947	-1.1167	-.1763
3	4	4	3	4	-.1471	1.3327	-.2887
3	4	1	4	4	0.0000	-.0579	.1350
3	4	3	4	2	0.0000	-.2552	.3281
3	4	3	4	4	0.0000	.1926	-.4270
4	4	2	1	2	.8562	0.0000	1.1433
4	4	4	1	4	1.4804	0.0000	.7652
4	4	1	2	2	-.1061	-.5379	-.1645
4	4	3	2	2	-.3077	.8957	-.4219
4	4	3	2	4	-.6163	-1.0418	-.6902
4	4	2	3	2	.1485	.0000	-.1052
4	4	2	3	4	-.1864	.6446	.0266
4	4	4	3	2	-.1868	-.6446	.0266
4	4	4	3	4	.4686	-.0000	-.3323
4	4	1	4	4	0.0000	.2086	-.1595
4	4	3	4	2	0.0000	.3160	.0980
4	4	3	4	4	0.0000	-.5298	.2573
5	4	2	1	2	.7045	0.0000	1.0659
5	4	4	1	4	1.4655	0.0000	1.2591
5	4	1	2	2	-.2944	-.3651	-.2598
5	4	3	2	2	.3321	.8533	-.0556
5	4	3	2	4	-1.0169	-.7207	-.8262
5	4	2	3	2	-.0671	-.5202	-.0428
5	4	2	3	4	.2054	.9237	-.1041
5	4	4	3	2	.0465	.5121	.1095
5	4	4	3	4	-.1546	-1.1987	-.1870
5	4	1	4	4	0.0000	-.2165	-.1141
5	4	3	4	2	0.0000	-.1279	-.2207
5	4	3	4	4	0.0000	.3350	.4482
6	4	2	1	2	0.0000	0.0000	.8624
6	4	4	1	4	0.0000	0.0000	1.6105
6	4	1	2	2	0.0000	0.0000	-.2703
6	4	3	2	2	0.0000	0.0000	.3049
6	4	3	2	4	0.0000	0.0000	-.8381
6	4	2	3	2	0.0000	0.0000	.0719
6	4	2	3	4	0.0000	0.0000	-.1976
6	4	4	3	2	0.0000	0.0000	-.0498
6	4	4	3	4	0.0000	0.0000	.1487
6	4	1	4	4	0.0000	0.0000	.1918
6	4	3	4	2	0.0000	0.0000	.0804
6	4	3	4	4	0.0000	0.0000	-.2397

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
5/2	9/2	2	1	2	0.0000	0.0000	1.1066
5/2	9/2	4	1	4	0.0000	0.0000	1.4569
5/2	9/2	1	2	2	0.0000	0.0000	.2259
5/2	9/2	3	2	2	0.0000	0.0000	-.7540
5/2	9/2	3	2	4	0.0000	0.0000	.3078
5/2	9/2	2	3	2	0.0000	0.0000	.0922
5/2	9/2	2	3	4	0.0000	0.0000	-.0376
5/2	9/2	4	3	2	0.0000	0.0000	-.3035
5/2	9/2	4	3	4	0.0000	0.0000	.1343
5/2	9/2	1	4	4	0.0000	0.0000	-.0238
5/2	9/2	3	4	2	0.0000	0.0000	-.1987
5/2	9/2	3	4	4	0.0000	0.0000	.0880
7/2	9/2	2	1	2	.7746	0.0000	1.1260
7/2	9/2	4	1	4	1.5374	0.0000	.9732
7/2	9/2	1	2	2	.2108	-.5040	.0222
7/2	9/2	3	2	2	-.7037	.6308	-.6156
7/2	9/2	3	2	4	.4331	-1.2942	-.3542
7/2	9/2	2	3	2	-.0738	.5786	-.0518
7/2	9/2	2	3	4	.0454	-.5223	.1216
7/2	9/2	4	3	2	.2428	-1.0157	-.1345
7/2	9/2	4	3	4	-.1622	1.2723	-.2304
7/2	9/2	1	4	4	0.0000	-.0601	.1325
7/2	9/2	3	4	2	0.0000	-.2217	.2772
7/2	9/2	3	4	4	0.0000	.1913	-.3949
9/2	9/2	2	1	2	.7873	0.0000	1.0926
9/2	9/2	4	1	4	1.4785	0.0000	1.1117
9/2	9/2	1	2	2	-.0857	-.4886	-.1338
9/2	9/2	3	2	2	-.2503	.8469	-.3551
9/2	9/2	3	2	4	-.5071	-1.0642	-.6177
9/2	9/2	2	3	2	.1312	.0003	-.0910
9/2	9/2	2	3	4	-.1728	.5303	.0415
9/2	9/2	4	3	2	-.1728	-.5303	.0415
9/2	9/2	4	3	4	.4035	.0000	-.2902
9/2	9/2	1	4	4	0.0000	.1917	-.1312
9/2	9/2	3	4	2	0.0000	.2610	.0755
9/2	9/2	3	4	4	0.0000	-.4740	.1949
11/2	9/2	2	1	2	.6454	0.0000	1.0039
11/2	9/2	4	1	4	1.3865	0.0000	1.4167
11/2	9/2	1	2	2	-.2635	-.3367	-.2290
11/2	9/2	3	2	2	.3157	.7816	-.0190
11/2	9/2	3	2	4	-.9114	-.7279	-.7662
11/2	9/2	2	3	2	-.0615	-.4725	-.0363
11/2	9/2	2	3	4	.1774	.8431	-.0817
11/2	9/2	4	3	2	.0467	.4959	.0984
11/2	9/2	4	3	4	-.1463	-1.1244	-.1547
11/2	9/2	1	4	4	0.0000	-.1882	-.1123
11/2	9/2	3	4	2	0.0000	-.1196	-.1998
11/2	9/2	3	4	4	0.0000	.3019	.3914
13/2	9/2	2	1	2	0.0000	0.0000	.7996
13/2	9/2	4	1	4	0.0000	0.0000	1.5693
13/2	9/2	1	2	2	0.0000	0.0000	-.2448
13/2	9/2	3	2	2	0.0000	0.0000	.2934
13/2	9/2	3	2	4	0.0000	0.0000	-.7737
13/2	9/2	2	3	2	0.0000	0.0000	.0666
13/2	9/2	2	3	4	0.0000	0.0000	-.1757
13/2	9/2	4	3	2	0.0000	0.0000	-.0506
13/2	9/2	4	3	4	0.0000	0.0000	.1444
13/2	9/2	1	4	4	0.0000	0.0000	.1667
13/2	9/2	3	4	2	0.0000	0.0000	.0773
13/2	9/2	3	4	4	0.0000	0.0000	-.2213

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
3	5	2	1	2	0.0000	0.0000	1.0157
3	5	4	1	4	0.0000	0.0000	1.5914
3	5	1	2	2	0.0000	0.0000	.2113
3	5	3	2	2	0.0000	0.0000	-.6719
3	5	3	2	4	0.0000	0.0000	.3509
3	5	2	3	2	0.0000	0.0000	.0846
3	5	2	3	4	0.0000	0.0000	-.0442
3	5	4	3	2	0.0000	0.0000	-.2592
3	5	4	3	4	0.0000	0.0000	.1469
3	5	1	4	4	0.0000	0.0000	-.0285
3	5	3	4	2	0.0000	0.0000	-.1770
3	5	3	4	4	0.0000	0.0000	.1004
4	5	2	1	2	.7045	0.0000	1.0659
4	5	4	1	4	1.4655	0.0000	1.2591
4	5	1	2	2	.1954	-.4501	.0356
4	5	3	2	2	-.6213	.6055	-.5483
4	5	3	2	4	.4308	-1.2214	-.2535
4	5	2	3	2	-.0671	.5202	-.0428
4	5	2	3	4	.0465	-.5121	.1095
4	5	4	3	2	.2054	-.9237	-.1041
4	5	4	3	4	-.1546	1.1987	-.1870
4	5	1	4	4	0.0000	-.0604	.1274
4	5	3	4	2	0.0000	-.1958	.2408
4	5	3	4	4	0.0000	.1856	-.3625
5	5	2	1	2	.7256	0.0000	1.0359
5	5	4	1	4	1.4412	0.0000	1.3190
5	5	1	2	2	-.0707	-.4472	-.1109
5	5	3	2	2	-.2075	.7970	-.3014
5	5	3	2	4	-.4237	-1.0526	-.5460
5	5	2	3	2	.1177	-.0000	-.0803
5	5	2	3	4	-.1601	.4431	.0497
5	5	4	3	2	-.1601	-.4431	.0497
5	5	4	3	4	.3544	-.0000	-.2551
5	5	1	4	4	0.0000	.1768	-.1096
5	5	3	4	2	0.0000	.2533	.0600
5	5	3	4	4	0.0000	-.4288	.1528
6	5	2	1	2	.5950	0.0000	.9444
6	5	4	1	4	1.3084	0.0000	1.4953
6	5	1	2	2	-.2384	-.3121	-.2043
6	5	3	2	2	.2999	.7198	.0071
6	5	3	2	4	-.8242	-.7194	-.7065
6	5	2	3	2	-.0567	-.4328	-.0315
6	5	2	3	4	.1558	.7733	-.0649
6	5	4	3	2	.0463	.4771	.0887
6	5	4	3	4	-.1380	-1.0543	-.1304
6	5	1	4	4	0.0000	-.1661	-.1088
6	5	3	4	2	0.0000	-.1121	-.1825
6	5	3	4	4	0.0000	.2744	.3480
7	5	2	1	2	0.0000	0.0000	.7445
7	5	4	1	4	0.0000	0.0000	1.5158
7	5	1	2	2	0.0000	0.0000	-.2237
7	5	3	2	2	0.0000	0.0000	.2814
7	5	3	2	4	0.0000	0.0000	-.7162
7	5	2	3	2	0.0000	0.0000	.0620
7	5	2	3	4	0.0000	0.0000	-.1579
7	5	4	3	2	0.0000	0.0000	-.0507
7	5	4	3	4	0.0000	0.0000	.1399
7	5	1	4	4	0.0000	0.0000	.1470
7	5	3	4	2	0.0000	0.0000	.0742
7	5	3	4	4	0.0000	0.0000	-.2049

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
7/2	11/2	2	1	2	0.0000	0.0000	.9342
7/2	11/2	4	1	4	0.0000	0.0000	1.6262
7/2	11/2	1	2	2	0.0000	0.0000	.1974
7/2	11/2	3	2	2	0.0000	0.0000	-.6030
7/2	11/2	3	2	4	0.0000	0.0030	.3711
7/2	11/2	2	3	2	0.0000	0.0000	.0778
7/2	11/2	2	3	4	0.0000	0.0000	-.0479
7/2	11/2	4	3	2	0.0000	0.0000	-.2247
7/2	11/2	4	3	4	0.0000	0.0000	.1501
7/2	11/2	1	4	4	0.0000	0.0000	-.0314
7/2	11/2	3	4	2	0.0000	0.0000	-.1589
7/2	11/2	3	4	4	0.0000	0.0000	.1062
9/2	11/2	2	1	2	.6454	0.0000	1.0039
9/2	11/2	4	1	4	1.3865	0.0000	1.4167
9/2	11/2	1	2	2	.1818	-.4066	.0437
9/2	11/2	3	2	2	-.5555	.5767	-.4908
9/2	11/2	3	2	4	.4219	-1.1456	-.1761
9/2	11/2	2	3	2	-.0615	.4725	-.0363
9/2	11/2	2	3	4	.0467	-.4959	.0984
9/2	11/2	4	3	2	.1774	-.8431	-.0817
9/2	11/2	4	3	4	-.1463	1.1244	-.1547
9/2	11/2	1	4	4	0.0000	-.0598	.1213
9/2	11/2	3	4	2	0.0000	-.1753	.2135
9/2	11/2	3	4	4	0.0000	.1783	-.3330
11/2	11/2	2	1	2	.6720	0.0000	.9792
11/2	11/2	4	1	4	1.3881	0.0000	1.4357
11/2	11/2	1	2	2	-.0593	-.4120	-.0934
11/2	11/2	3	2	2	-.1748	.7493	-.2583
11/2	11/2	3	2	4	-.3588	-1.0243	-.4813
11/2	11/2	2	3	2	.1067	.0000	-.0719
11/2	11/2	2	3	4	-.1489	.3753	.0540
11/2	11/2	4	3	2	-.1489	-.3753	.0540
11/2	11/2	4	3	4	.3169	-.0000	-.2265
11/2	11/2	1	4	4	0.0000	.1638	-.0929
11/2	11/2	3	4	2	0.0000	.2306	.0490
11/2	11/2	3	4	4	0.0000	-.3916	.1231
13/2	11/2	2	1	2	.5516	0.0000	.8891
13/2	11/2	4	1	4	1.2344	0.0000	1.5252
13/2	11/2	1	2	2	-.2174	-.2907	-.1841
13/2	11/2	3	2	2	.2849	.6662	.0258
13/2	11/2	3	2	4	-.7512	-.7027	-.6508
13/2	11/2	2	3	2	-.0525	-.3993	-.0278
13/2	11/2	2	3	4	.1385	.7128	-.0521
13/2	11/2	4	3	2	.0455	.4575	.0802
13/2	11/2	4	3	4	-.1302	-.9898	-.1117
13/2	11/2	1	4	4	0.0700	-.1485	-.1045
13/2	11/2	3	4	2	0.0300	-.1053	-.1679
13/2	11/2	3	4	4	0.0000	.2513	.3138
15/2	11/2	2	1	2	0.0000	0.0000	.6960
15/2	11/2	4	1	4	0.0000	0.0000	1.4574
15/2	11/2	1	2	2	0.0000	0.0000	-.2059
15/2	11/2	3	2	2	0.0000	0.0000	.2696
15/2	11/2	3	2	4	0.0000	0.0000	-.6452
15/2	11/2	2	3	2	0.0000	0.0000	.0580
15/2	11/2	2	3	4	0.0000	0.0000	-.1431
15/2	11/2	4	3	2	0.0000	0.0000	-.0502
15/2	11/2	4	3	4	0.0000	0.0000	.1345
15/2	11/2	1	4	4	0.0000	0.0000	.1312
15/2	11/2	3	4	2	0.0000	0.0000	.0710
15/2	11/2	3	4	4	0.0000	0.0000	-.1903

I ₂	I ₁	λ ₁	λ	λ ₂	L, L'		
					1,2	1,3	2,3
4	6	2	1	2	0.0000	0.0000	.8624
4	6	4	1	4	0.0000	0.0000	1.6105
4	6	1	2	2	0.0000	0.0000	.1846
4	6	3	2	2	0.0000	0.0000	-.5455
4	6	3	2	4	0.0000	0.0000	.3782
4	6	2	3	2	0.0000	0.0000	.0719
4	6	2	3	4	0.0000	0.0000	-.0490
4	6	4	3	2	0.0000	0.0000	-.1976
4	6	4	3	4	0.0000	0.0000	.1487
4	6	1	4	4	0.0000	0.0000	-.0331
4	6	3	4	2	0.0000	0.0000	-.1437
4	6	3	4	4	0.0000	0.0000	.1082
5	6	2	1	2	.5950	0.0000	.9444
5	6	4	1	4	1.3084	0.0000	1.4953
5	6	1	2	2	.1698	-.3706	.0485
5	6	3	2	2	-.5017	.5474	-.4420
5	6	3	2	4	.4097	-1.0728	-.1170
5	6	2	3	2	-.0567	.4328	-.0315
5	6	2	3	4	.0463	-.4771	.0887
5	6	4	3	2	.1558	-.7733	-.0649
5	6	4	3	4	-.1380	1.0543	-.1304
5	6	1	4	4	0.0000	-.0586	.1151
5	6	3	4	2	0.0000	-.1587	.1920
5	6	3	4	4	0.0000	.1705	-.3069
6	6	2	1	2	.6252	0.0000	.9251
6	6	4	1	4	1.3291	0.0000	1.4943
6	6	1	2	2	-.0505	-.3818	-.0798
6	6	3	2	2	-.1492	.7049	-.2233
6	6	3	2	4	-.3076	-.9882	-.4250
6	6	2	3	2	.0977	.0000	-.0652
6	6	2	3	4	-.1390	.3217	.0560
6	6	4	3	2	-.1390	-.3217	.0560
6	6	4	3	4	.2866	.0000	-.2031
6	6	1	4	4	0.0000	.1524	-.0796
6	6	3	4	2	0.0000	.2118	.0407
6	6	3	4	4	0.0000	-.3603	.1013
7	6	2	1	2	.5140	0.0000	.8382
7	6	4	1	4	1.1658	0.0000	1.5251
7	6	1	2	2	-.2001	-.2720	-.1673
7	6	3	2	2	.2709	.6195	.0393
7	6	3	2	4	-.6895	-.6818	-.6003
7	6	2	3	2	-.0490	-.3706	-.0249
7	6	2	3	4	.1246	.6603	-.0422
7	6	4	3	2	.0445	.4382	.0729
7	6	4	3	4	-.1230	-.9312	-.0972
7	6	1	4	4	0.0000	-.1341	-.0999
7	6	3	4	2	0.0000	-.0993	-.1554
7	6	3	4	4	0.0000	.2316	.2862
8	6	2	1	2	0.0000	0.0000	.6531
8	6	4	1	4	0.0000	0.0000	1.3979
8	6	1	2	2	0.0000	0.0000	-.1907
8	6	3	2	2	0.0000	0.0000	.2582
8	6	3	2	4	0.0000	0.0000	-.6201
8	6	2	3	2	0.0000	0.0000	.0544
8	6	2	3	4	0.0000	0.0000	-.1307
8	6	4	3	2	0.0000	0.0000	-.0495
8	6	4	3	4	0.0000	0.0000	.1291
8	6	1	4	4	0.0000	0.0000	.1182
8	6	3	4	2	0.0000	0.0000	.0680
8	6	3	4	4	0.0000	0.0000	-.1774

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
9/2	13/2	2	1	2	0.0000	0.0000	.7996
9/2	13/2	4	1	4	0.0000	0.0000	1.5693
9/2	13/2	1	2	2	0.0000	0.0000	.1731
9/2	13/2	3	2	2	0.0000	0.0000	-.4970
9/2	13/2	3	2	4	0.0000	0.0000	.3775
9/2	13/2	2	3	2	0.0000	0.0000	.0666
9/2	13/2	2	3	4	0.0000	0.0000	-.0506
9/2	13/2	4	3	2	0.0000	0.0000	-.1757
9/2	13/2	4	3	4	0.0000	0.0000	.1449
9/2	13/2	1	4	4	0.0000	0.0000	-.0340
9/2	13/2	3	4	2	0.0000	0.0000	-.1310
9/2	13/2	3	4	4	0.0000	0.0000	.1080
11/2	13/2	2	1	2	.5516	0.0000	.8891
11/2	13/2	4	1	4	1.2344	0.0000	1.5252
11/2	13/2	1	2	2	.1592	-.3405	.0513
11/2	13/2	3	2	2	-.4572	.5193	-.4006
11/2	13/2	3	2	4	.3959	-1.0053	-.0718
11/2	13/2	2	3	2	-.0525	.3993	-.0278
11/2	13/2	2	3	4	.0455	-.4575	.0802
11/2	13/2	4	3	2	.1385	-.7128	-.0521
11/2	13/2	4	3	4	-.1302	.9898	-.1117
11/2	13/2	1	4	4	0.0000	-.0571	.1090
11/2	13/2	3	4	2	0.0000	-.1449	.1748
11/2	13/2	3	4	4	0.0000	.1627	-.2841
13/2	13/2	2	1	2	.5841	0.0000	.8747
13/2	13/2	4	1	4	1.2692	0.0000	1.5155
13/2	13/2	1	2	2	-.0435	-.3556	-.0689
13/2	13/2	3	2	2	-.1288	.6644	-.1948
13/2	13/2	3	2	4	-.2665	-.9491	-.3766
13/2	13/2	2	3	2	.0902	-.0000	-.0596
13/2	13/2	2	3	4	-.1301	.2787	.0565
13/2	13/2	4	3	2	-.1301	-.2787	.0565
13/2	13/2	4	3	4	.2617	-.0000	-.1838
13/2	13/2	1	4	4	0.0000	.1424	-.0690
13/2	13/2	3	4	2	0.0000	.1958	.0345
13/2	13/2	3	4	4	0.0000	-.3337	.0849
15/2	13/2	2	1	2	.4811	0.0000	.7918
15/2	13/2	4	1	4	1.1027	0.0000	1.5066
15/2	13/2	1	2	2	-.1852	-.2556	-.1531
15/2	13/2	3	2	2	.2580	.5786	.0491
15/2	13/2	3	2	4	-.6366	-.6590	-.5551
15/2	13/2	2	3	2	-.0458	-.3458	-.0225
15/2	13/2	2	3	4	.1131	.6144	-.0344
15/2	13/2	4	3	2	.0434	.4196	.0665
15/2	13/2	4	3	4	-.1163	-.8781	-.0856
15/2	13/2	1	4	4	0.0000	-.1221	-.0954
15/2	13/2	3	4	2	0.0000	-.3938	-.1446
15/2	13/2	3	4	4	0.0000	.2147	.2633
17/2	13/2	2	1	2	0.0000	0.0000	.6149
17/2	13/2	4	1	4	0.0000	0.0000	1.3395
17/2	13/2	1	2	2	0.0000	0.0000	-.1775
17/2	13/2	3	2	2	0.0000	0.0000	.2473
17/2	13/2	3	2	4	0.0000	0.0000	-.5830
17/2	13/2	2	3	2	0.0000	0.0000	.0512
17/2	13/2	2	3	4	0.0000	0.0000	-.1202
17/2	13/2	4	3	2	0.0000	0.0000	-.0486
17/2	13/2	4	3	4	0.0000	0.0000	.1237
17/2	13/2	1	4	4	0.0000	0.0000	.1075
17/2	13/2	3	4	2	0.0000	0.0000	.0652
17/2	13/2	3	4	4	0.0000	0.0000	-.1659

L, L'						
I_2	I_1	λ_1	λ	λ_2	1,2	1,3
						2,3
5	7	2	1	2	0.0000	0.0000
5	7	4	1	4	0.0000	0.0000
5	7	1	2	2	0.0000	0.0000
5	7	3	2	2	0.0000	0.0000
5	7	3	2	4	0.0000	0.0000
5	7	2	3	2	0.0000	0.0000
5	7	2	3	4	0.0000	0.0000
5	7	4	3	2	0.0000	0.0000
5	7	4	3	4	0.0000	0.0000
5	7	1	4	4	0.0000	0.0000
5	7	3	4	2	0.0000	0.0000
5	7	3	4	4	0.0000	0.0000
6	7	2	1	2	.5140	0.0000
6	7	4	1	4	1.1658	0.0000
6	7	1	2	2	.1498	-.3148
6	7	3	2	2	-.4197	.4928
6	7	3	2	4	.3817	-.9436
6	7	2	3	2	-.0490	.3706
6	7	2	3	4	.0445	-.4382
6	7	4	3	2	.1246	-.6603
6	7	4	3	4	-.1230	.9312
6	7	1	4	4	0.0000	-.0555
6	7	3	4	2	0.0000	-.1333
6	7	3	4	4	0.0000	.1352
7	7	2	1	2	.5478	0.0000
7	7	4	1	4	1.2109	0.0000
7	7	1	2	2	-.0379	-.3327
7	7	3	2	2	-.1123	.6274
7	7	3	2	4	-.2330	-.9095
7	7	2	3	2	.0837	.0000
7	7	2	3	4	-.1223	.2437
7	7	4	3	2	-.1223	-.2437
7	7	4	3	4	.2410	.0000
7	7	1	4	4	0.0000	.1336
7	7	3	4	2	0.0000	.1822
7	7	3	4	4	0.0000	-.3107
8	7	2	1	2	.4520	0.0000
8	7	4	1	4	1.0449	0.0000
8	7	1	2	2	-.1723	-.2409
8	7	3	2	2	.2460	.5425
8	7	3	2	4	-.5910	-.6356
8	7	2	3	2	-.0430	-.3241
8	7	2	3	4	.1034	.5741
8	7	4	3	2	.0423	.4019
8	7	4	3	4	-.1102	-.8300
8	7	1	4	4	0.0000	-.1121
8	7	3	4	2	0.0000	-.0889
8	7	3	4	4	0.0000	.2000
9	7	2	1	2	0.0000	0.0000
9	7	4	1	4	0.0000	0.0000
9	7	1	2	2	0.0000	0.0000
9	7	3	2	2	0.0000	0.0000
9	7	3	2	4	0.0000	0.0000
9	7	2	3	2	0.0000	0.0000
9	7	2	3	4	0.0000	0.0000
9	7	4	3	2	0.0000	0.0000
9	7	4	3	4	0.0000	0.0000
9	7	1	4	4	0.0000	0.0000
9	7	3	4	2	0.0000	0.0000
9	7	3	4	4	0.0000	0.0000
10	7	2	1	2	0.0000	0.0000
10	7	4	1	4	0.0000	0.0000
10	7	1	2	2	0.0000	0.0000
10	7	3	2	2	0.0000	0.0000
10	7	3	2	4	0.0000	0.0000
10	7	2	3	2	0.0000	0.0000
10	7	2	3	4	0.0000	0.0000
10	7	4	3	2	0.0000	0.0000
10	7	4	3	4	0.0000	0.0000
10	7	1	4	4	0.0000	0.0000
10	7	3	4	2	0.0000	0.0000
10	7	3	4	4	0.0000	0.0000

I_2	I_1	λ_1	λ	λ_2	L, L'		
					1,2	1,3	2,3
11/2	15/2	2	1	2	0.0000	0.0000	.6960
11/2	15/2	4	1	4	0.0000	0.0000	1.4574
11/2	15/2	1	2	2	0.0000	0.0000	.1535
11/2	15/2	3	2	2	0.0000	0.0000	-.4207
11/2	15/2	3	2	4	0.0000	0.0000	.3643
11/2	15/2	2	3	2	0.0000	0.0000	.0580
11/2	15/2	2	3	4	0.0000	0.0000	-.0502
11/2	15/2	4	3	2	0.0000	0.0000	-.1431
11/2	15/2	4	3	4	0.0000	0.0000	.1345
11/2	15/2	1	4	4	0.0000	0.0000	-.0343
11/2	15/2	3	4	2	0.0000	0.0000	-.1109
11/2	15/2	3	4	4	0.0000	0.0000	.1042
13/2	15/2	2	1	2	.4811	0.0000	.7918
13/2	15/2	4	1	4	1.1027	0.0000	1.5066
13/2	15/2	1	2	2	.1414	-.2928	.0534
13/2	15/2	3	2	2	-.3877	.4662	-.3352
13/2	15/2	3	2	4	.3676	-.8877	-.0099
13/2	15/2	2	3	2	-.0458	.3458	-.0225
13/2	15/2	2	3	4	-.0434	-.4196	.0665
13/2	15/2	4	3	2	.1131	-.6144	-.0344
13/2	15/2	4	3	4	-.1163	.8781	-.0856
13/2	15/2	1	4	4	0.0000	-.0537	.0980
13/2	15/2	3	4	2	0.0000	-.1234	.1485
13/2	15/2	3	4	4	0.0000	.1481	-.2465
15/2	15/2	2	1	2	.5157	0.0000	.7854
15/2	15/2	4	1	4	1.1553	0.0000	1.4950
15/2	15/2	1	2	2	-.0333	-.3125	-.0528
15/2	15/2	3	2	2	-.0988	.5938	-.1516
15/2	15/2	3	2	4	-.2054	-.8708	-.2997
15/2	15/2	2	3	2	.0782	-.0000	-.0510
15/2	15/2	2	3	4	-.1153	.2148	.0553
15/2	15/2	4	3	2	-.1153	-.2148	.0553
15/2	15/2	4	3	4	.2235	.0000	-.1542
15/2	15/2	1	4	4	0.0000	.1258	-.0531
15/2	15/2	3	4	2	0.0000	.1703	.0257
15/2	15/2	3	4	4	0.0000	-.2908	.0623
17/2	15/2	2	1	2	.4262	0.0000	.7112
17/2	15/2	4	1	4	.9922	0.0000	1.4409
17/2	15/2	1	2	2	-.1611	-.2278	-.1307
17/2	15/2	3	2	2	.2350	.5105	.0613
17/2	15/2	3	2	4	-.5512	-.6125	-.4790
17/2	15/2	2	3	2	-.0406	-.3050	-.0189
17/2	15/2	2	3	4	.0452	.5385	-.0232
17/2	15/2	4	3	2	.0411	.3853	.0561
17/2	15/2	4	3	4	-.1047	-.7845	-.0646
17/2	15/2	1	4	4	0.0000	-.1035	-.0870
17/2	15/2	3	4	2	0.0000	-.0845	-.1270
17/2	15/2	3	4	4	0.0000	.1871	-.2275
19/2	15/2	2	1	2	0.0000	0.0000	.5502
19/2	15/2	4	1	4	0.0000	0.0000	1.2301
19/2	15/2	1	2	2	0.0000	0.0000	-.1560
19/2	15/2	3	2	2	0.0000	0.0000	.2276
19/2	15/2	3	2	4	0.0000	0.0000	-.5126
19/2	15/2	2	3	2	0.0000	0.0000	.0458
19/2	15/2	2	3	4	0.0000	0.0000	-.1033
19/2	15/2	4	3	2	0.0000	0.0000	-.0464
19/2	15/2	4	3	4	0.0000	0.0000	.1134
19/2	15/2	1	4	4	0.0000	0.0000	.0907
19/2	15/2	3	4	2	0.0000	0.0000	.0600
19/2	15/2	3	4	4	0.0000	0.0000	-.1466

I ₂	I ₁	λ ₁	λ	λ ₂	L ₂ L'		
					1,2	1,3	2,3
6	8	2	1	2	0.0000	0.0000	.6531
6	8	4	1	4	0.0000	0.0000	1.3979
6	8	1	2	2	0.0000	0.0000	.1451
6	8	3	2	2	0.0000	0.0000	-.3903
6	8	3	2	4	0.0000	0.0000	.3550
6	8	2	3	2	0.0000	0.0000	.0544
6	8	2	3	4	0.0000	0.0000	-.0495
6	8	4	3	2	0.0000	0.0000	-.1307
6	8	4	3	4	0.0000	0.0000	.1291
6	8	1	4	4	0.0000	0.0000	-.0341
6	8	3	4	2	0.0000	0.0000	-.1029
6	8	3	4	4	0.0000	0.0000	.1015
7	8	2	1	2	.4520	0.0000	.7496
7	8	4	1	4	1.0449	0.0000	1.4770
7	8	1	2	2	.1339	-.2736	.0534
7	8	3	2	2	-.3602	.4455	-.3090
7	8	3	2	4	.3938	-.8371	.0111
7	8	2	3	2	-.0430	.3241	-.0206
7	8	2	3	4	.0423	-.4019	.0610
7	8	4	3	2	.1034	-.5741	-.0282
7	8	4	3	4	-.1102	.8300	-.0763
7	8	1	4	4	0.0000	-.0520	.0931
7	8	3	4	2	0.0000	-.1148	.1382
7	8	3	4	4	0.0000	.1415	-.2310
8	8	2	1	2	.4869	0.0000	.7462
8	8	4	1	4	1.1029	0.0000	1.4677
8	8	1	2	2	-.0295	-.2946	-.0468
8	8	3	2	2	-.0876	.5632	-.1351
8	8	3	2	4	-.1824	-.8337	-.2692
8	8	2	3	2	.0733	-.0000	-.0476
8	8	2	3	4	-.1090	.1907	.0541
8	8	4	3	2	-.1090	-.1907	.0541
8	8	4	3	4	.2084	.0000	-.1426
8	8	1	4	4	0.0000	.1188	-.0472
8	8	3	4	2	0.0000	.1600	.0225
8	8	3	4	4	0.0000	-.2733	.0543
9	8	2	1	2	.4032	0.0000	.6761
9	8	4	1	4	.9439	0.0000	1.4014
9	8	1	2	2	-.1512	-.2161	-.1216
9	8	3	2	2	.2249	.4819	.0649
9	8	3	2	4	-.5163	-.5900	-.4471
9	8	2	3	2	-.0384	-.2880	-.0175
9	8	2	3	4	.0882	.5069	-.0191
9	8	4	3	2	.0400	.3697	.0519
9	8	4	3	4	-.0996	-.7469	-.0623
9	8	1	4	4	0.0000	-.0961	-.0832
9	8	3	4	2	0.0000	-.0804	-.1197
9	8	3	4	4	0.0000	.1758	.2131
10	8	2	1	2	0.0000	0.0000	.5225
10	8	4	1	4	0.0000	0.0000	1.1793
10	8	1	2	2	0.0000	0.0000	-.1470
10	8	3	2	2	0.0000	0.0000	.2186
10	8	3	2	4	0.0000	0.0000	-.4840
10	8	2	3	2	0.0000	0.0000	.0435
10	8	2	3	4	0.0000	0.0000	-.0964
10	8	4	3	2	0.0000	0.0000	-.0453
10	8	4	3	4	0.0000	0.0000	.1089
10	8	1	4	4	0.0000	0.0000	.0840
10	8	3	4	2	0.0000	0.0000	.0576
10	8	3	4	4	0.0000	0.0000	-.1384

FIGURE CAPTIONS

Fig. 1. Two successive radiations X_1 and X_2 emitted from an oriented nuclear state I_1 .

Fig. 2. The geometry of a DCO measurement of radiations X_1 and X_2 emitted from an axially symmetric oriented source S.

Fig. 1

Fig. 2