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EVALUATION OF NEUTRON NUCLEAR DATA FOR DEUTERIUM

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Evaluation of Neutron Nuclear Data for Deuterium

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Evaluation of neutron nuclear data for ^2H has been performed in the neutron energy region from 10^{-5} eV to 20 MeV. The evaluated quantities are the total, elastic scattering, capture and (n,2n) reaction cross sections, the angular distribution for the elastic scattering and the double-differential cross section for the (n,2n) reaction. Theoretical calculations were done of the elastic angular distribution and the neutron spectrum from the (n,2n) reaction on the basis of the Faddeev equation. The present evaluated data are compiled in the ENDF/B format and to be stored in the second version of Japanese Evaluated Nuclear Data Library, JENDL-2.

Keywords: Evaluation, Deuterium, Neutron Nuclear Data, Cross Section, Faddeev Equation, JENDL-2, 10^{-5} eV - 20MeV Range

重水素の中性子核データの評価

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(1983年1月17日受理)

^2H の中性子核データを 10^{-5} eV から 20 MeV の中性子エネルギーにわたって評価した。評価した量は全断面積，弾性散乱断面積，中性子捕獲断面積， $(n, 2n)$ 反応断面積，弾性散乱角度分布および $(n, 2n)$ 反応二重微分断面積である。弾性散乱角度分布および $(n, 2n)$ 反応からの放出中性子スペクトルは Faddeev 方程式にもとづいて計算された。評価済みデータは ENDF/B フォーマットでファイル化されており，日本の評価済み核データライブラリーの第2版，JENDL-2 に格納される。

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1. Introduction

Evaluation of neutron nuclear data for deuterium is important not only for thermal reactors but also for fusion neutronics. Horsley and Stewart¹⁾ performed the evaluation on the basis of the available experimental data, and ENDF/B-V²⁾ adopted their results with a slight modification. Although they also calculated the double-differential cross sections for the (n,2n) reaction from the phase-space model, their results could not reproduce the experimental data of Brüllmann et al.³⁾.

In the present work, the neutron nuclear data of ^2H were evaluated from 10^{-5} eV to 20 MeV on the basis of the available experimental data and theoretical calculations. The evaluated quantities are the total, elastic scattering, capture and (n,2n) reaction cross sections, the elastic angular distribution and the double-differential cross section for the $^2\text{H}(n,2n)p$ reaction.

The angular distributions of elastically scattered neutrons and the neutron spectra from the breakup reaction have been calculated in this work from the three-body model based on the Faddeev equation⁴⁾. Proton spectra from the $^2\text{H}(n,p)2n$ and $^2\text{H}(p,2p)n$ reactions were reproduced fairly well^{5,6)} by this model. Thus, it is not inappropriate approach to analyze neutron spectra from the $^2\text{H}(n,2n)p$ reaction with the three-body model, although the experimental data on the neutron spectra are very scarce.

The present results are compiled in the ENDF/B format, and they are stored in the second version of Japanese Evaluated Nuclear Data Library, JENDL-2.

2. Status of Experimental Data

2.1 Total Cross Section

In the thermal energy region Fermi and Marschall⁷⁾ gave a value of 3.44 b for the scattering cross section, while Van Oers and Seagrave⁸⁾ reported a value of 3.14 ± 0.06 b. Dilg et al.⁹⁾ performed a measurement of the n-²H scattering at 130 eV and obtained a value of 3.390 ± 0.012 b, which was recommended in the fourth edition of BNL-325¹⁰⁾. Since the capture cross section is very small in these energy regions, the scattering cross section is nearly equal to the total cross section. Stoler et al.¹¹⁾ measured the total cross sections in the energy range from 1 keV to 1 MeV. It should be noted that their measured cross sections join smoothly to the measurements of Fermi and Marschall and of Dilg et al. rather than that of Van Oers and Seagrave.

Above 200 keV several measurements were performed: Adair et al. in 260 keV \sim 2.96 MeV (1953)¹²⁾; Seagrave and Henkel in 270 keV \sim 22 MeV (1955)¹³⁾; Foester, Jr. and Glasgow in 2.5 MeV \sim 15 MeV (1971)¹⁴⁾; Davis and Barschall in 1.5 MeV \sim 27.5 MeV (1971)¹⁵⁾; Clement et al. in 500 keV \sim 30 MeV (1972)¹⁶⁾. In the region from 0.5 to 1 MeV, the results of Clement et al. were in good agreement with those of Stoler et al. The data of Clement et al. were also consistent with those of Davis and Barschall and of Foester, Jr. and Glasgow.

In Table I are given the brief descriptions of the above experiments.

2.2 Elastic Scattering Cross Section

There are only a few measurements of the differential cross sections in the energy region from 100 keV to 1 MeV. On the other hand many experiments were performed above 1 MeV, and the elastic scattering cross

sections were obtained by integrating the measured angular distributions.

2.3 Radiative Capture Cross Section

Thermal cross sections were given in several papers¹⁷⁻²¹⁾. The brief descriptions of the experiments are listed in Table II. The measured values are the following:

- 0.57 ± 0.01 mb, Kaplan et al. (1952)¹⁷⁾;
- 0.60 ± 0.05 mb, Journey and Motz (1963)¹⁸⁾;
- 0.353 ± 0.035 mb, Trail and Raboy (1963)¹⁹⁾;
- 0.521 ± 0.009 mb, Merritt et al. (1968)²⁰⁾;
- 0.55 ± 0.01 mb, Ishikawa (1973)²¹⁾.

Of these measurements Ishikawa²¹⁾ determined the thermal cross section by using four different methods. Hence, his measured value seems to be most reliable.

Cerineo et al.²²⁾ obtained the capture cross section at 14.4 MeV from measurement of tritons. There are no experimental data in the other energy regions.

2.4 (n,2n) Reaction Cross Section

Catron et al.²³⁾ obtained the (n,2n) reaction cross sections by counting double-pulse events in the energy region of 6.1 to 14.1 MeV.

Holmberg²⁴⁾ measured the correlation time between two pulses due to neutrons, and deduced the (n,2n) cross sections for 4.1 - 6.55 MeV.

Pauletta and Brooks²⁵⁾ measured the n-d breakup cross sections between 8 and 22 MeV by integrating the energy distributions of breakup protons in a deuterated scintillator.

The experimental data on the energy-angular distributions of neutrons emitted from the (n,2n) reaction are very scarce. However

there are a few measurements around 14 MeV. Jérémie²⁶⁾ and Messelt²⁷⁾ performed experiments at a few angles. Brüllmann et al.³⁾ measured the double-differential cross sections for eight angles between 7.5° to 75° at an incident energy of 14.1 MeV. Recently Gul et al.²⁸⁾ measured the emitted neutron spectra for 30° - 75°.

The status of the experimental work is given in Tables III and IV.

3. Evaluation of Neutron Nuclear Data

3.1 Total Cross Section

The total cross section was estimated from the available experimental data^{9,11-16)} by using the spline function.

3.2 Elastic Scattering Cross Section

The elastic scattering cross section below the (n,2n) threshold energy was given as the difference between the total and capture cross sections. Above the (n,2n) threshold the elastic scattering cross section was obtained by subtracting the (n,2n) and capture cross sections from the total cross section. Evaluation of the (n,2n) and capture cross sections are described in the following subsections.

3.3 Radiative Capture Cross Section

Since there are measurements only at the thermal energy and 14.4 MeV, present evaluated values were obtained from the inverse reaction ${}^3\text{H}(\gamma, n){}^2\text{H}$ by taking account of the detailed balance. Gunn and Irving²⁹⁾ derived the photo-disintegration cross-section formula for three-particle nuclei. The electric dipole disintegration cross-section

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for tritium is given by

$$\sigma_{T(\gamma,n)D} = 32(e^2/\hbar c)E_\gamma(E_\gamma - Q)^{3/2}\mu_T^4\hbar^6 f^2(\lambda)W_D^{-11/2}M^{-3} \quad (1)$$

with

$$f(\lambda) = (7\lambda - 2)\lambda^{-2}(\lambda - 1)^{-2} - 15(\lambda - 1)^{-3} + 15(\lambda - 1)^{-7/2}\cos^{-1}(\lambda^{-1/2}) \quad (2)$$

and

$$\lambda = (ME_\gamma - MQ + 3\mu_T^2\hbar^2/2)(MW_D)^{-1}, \quad (3)$$

where E_γ is the incident energy of γ -ray, $-Q$ is the Q -value of the photo-disintegration, M is the nucleon mass, and W_D is the deuteron binding energy. The value of μ_T determines the size of the tritium wave-function and is adjusted so as to give the best fit to the experimental data on the photo-disintegration cross section. The capture cross section $\sigma_{n,\gamma}$ is obtained from $\sigma_{T(\gamma,n)D}$ by using the principle of detailed balance. That is,

$$\sigma_{n,\gamma}(E) = E_\gamma^2 [2Mc^2(E_\gamma - Q)]^{-1} \sigma_{T(\gamma,n)D}(E_\gamma). \quad (4)$$

The neutron energy E in laboratory system is given by

$$E = 3(E_\gamma - Q)/2. \quad (5)$$

Although the capture cross sections are expected to be $1/v$ -form in the low energy region, the Gunn-Irving theory²⁹⁾ is not able to reproduce such behaviour. Thus, the capture cross section at 0.0253 eV was determined from the measurement of Ishikawa²¹⁾ and extrapolated as $1/v$ up to 1 keV. Above 1 keV the capture cross sections were given by the Gunn-Irving theory with $\mu_T^{-1} = 2.6 \text{ fm}$ ³⁰⁾.

3.4 (n,2n) Reaction Cross Section

The (n,2n) reaction cross section was evaluated from the measurements of Catron et al.²³⁾, Holmberg²⁴⁾ and Pauletta and Brooks²⁵⁾ by the spline function fitting.

3.5 Elastic Angular Distribution and Double-Differential Cross Section for the (n,2n) Reaction

The elastic angular distributions and the double-differential cross sections (energy-angular distributions) for the (n,2n) reaction were calculated from the three-body model based on the Faddeev equation⁴⁾. According to the Faddeev theory, the three-body T-matrix consists of three parts:

$$T = T^{(1)} + T^{(2)} + T^{(3)} \quad (6)$$

with

$$T^{(i)} = V_i + V_i G_0 T, \quad i=1,2,3, \quad (7)$$

where V_i is the interaction between particles j and k ($j \neq k \neq i$), and G_0 is the free three-particle Green's function. By introducing the two-body T-matrices which are given by

$$T_i = V_i + V_i G_0 T_i, \quad i=1,2,3, \quad (8)$$

eq. (7) is rearranged to give the following coupled integral equations:

$$T^{(i)} = T_i + \sum_{j=1}^3 (1 - \delta_{ij}) T_i G_0 T^{(j)}, \quad i=1,2,3. \quad (9)$$

Equation (9) has a unique solution, while the Lippmann-Schwinger equation has no unique solution in the three-particle case.⁴⁾

As the nucleon-nucleon interaction, s-wave separable potentials were employed to simplify the coupled integral equations. In the momentum representation these potentials are given by

$$\langle \vec{p}' | V_i | \vec{p} \rangle = \lambda_i g_i(p') g_i(p). \quad (10)$$

The form factor $g_i(p)$ was assumed to be Yamaguchi type³¹⁾, i.e.

$$g_i(p) = 1/(p^2 + \beta_i^2). \quad (11)$$

The parameters λ_i and β_i in eqs. (10) and (11) are determined from the scattering lengths a and effective ranges r_0 for the nucleon-nucleon scattering. The values of a and r_0 used in the present calculations are listed in Table V.

The three-body amplitudes were calculated by the computer code developed by Ebenhöh³²⁾. From these amplitudes the elastic angular distribution was derived as follows:

$$d\sigma_{el}/d\Omega = 2|T_E^Q|^2/3 + |T_E^D|^2/3, \quad (12)$$

where T_E^Q and T_E^D are the quartet and doublet elastic amplitudes, respectively. The double-differential cross section of the (n,2n) reaction is given by

$$d^2\sigma_{n,2n}/dE_n d\Omega_n = E^{-1/2} \rho(E_n, \theta_n) \int |T|^2 d\Omega_{23} \quad (13)$$

with

$$|T|^2 = 2|T_B^Q|^2/3 + |T_B^D|^2/3, \quad (14)$$

where E is the laboratory energy of the incident neutron, E_n is the emitted-neutron energy, Ω_{23} is the direction of the relative momentum between remaining two nucleons, ρ is the phase-space factor, and T_B^Q and T_B^D are the quartet and doublet breakup amplitudes, respectively. The phase-space factor is proportional to $(E_n E_{23})^{1/2}$, where E_{23} is the relative energy between proton and neutron. The derivations of the elastic and breakup amplitudes are briefly described in the appendix.

4. Results and Discussions

In Figs. 1, 2 and 3 are shown the present results of the total cross section by comparing with ENDF/B-IV³³⁾. The latter data, based on the experimental data measured before 1966, disagree with the recent measurements^{9,11,14-16)}. The elastic scattering cross section, which was given as the difference between the total and reaction cross sections, gives a good fit to the experimental data³⁴⁻³⁹⁾ as shown in Fig. 4.

The calculation of the capture cross section is shown in Fig. 5. It gives a value of one-third at 14.4 MeV as compared with that of Cerineo et al.²²⁾. We do not, however, take account of this measurement for the present because there are no other measurements around this energy region.

Figure 6 shows the evaluated (n,2n) reaction cross sections. Above 14 MeV the present result differs from ENDF/B-IV which was based on the data of Catron et al.²³⁾ alone. The three-body model calculation gives a flat excitation function at these energies and is in good agreement with the experiments. Our evaluation, therefore, seems to be more reasonable than ENDF/B-IV.

Figures 7-11 show the calculated angular distributions of elastically scattered neutrons. The calculated differential cross sections were normalized so that the angle-integrated value might be consistent with that given as the difference between the total and reaction cross sections at each energy. The calculations are in good agreement with the experimental data^{12,34,37,38,40-45)}. Furthermore it should be noted that the present calculated differential cross section at 0 degree is always reasonably greater than Wick's limit.

In Figs. 12, 13 and 14 are given the double-differential cross sections for the (n,2n) reaction at 14.1 MeV. Normalization was taken so

that the integrated cross section might give a value twice as large as the (n,2n) reaction cross section. At all angles the calculations reproduce the shapes of the measured neutron spectra^{3,27,28)} fairly well. In Fig. 12 three peaks are seen around zero, intermediate and maximum neutron energies. The small peak at the upper end of the spectrum is due to the final-state interaction⁴⁶⁾ between neutron and proton at very small neutron-proton relative energy. The broader peak in the intermediate energy region is caused by the neutron-neutron and neutron-proton final-state interactions. The peak near zero energy is associated with the quasi-free scattering of neutron and proton. The agreement with experiment is also good at 20°, as shown in Fig. 13. The evaluation by Horsley and Stewart¹⁾, who employed the phase-space model, could not explain the structure of the measured spectrum. Even at large angles the calculated double-differential cross sections are in good agreement with the measured neutron spectra, as shown in Fig. 14.

5. Concluding Remarks

The neutron nuclear data for deuterium have been evaluated in the energy range of 10^{-5} eV to 20 MeV, and these data are stored in JENDL-2. The presently evaluated data are listed in Table VI with ENDF/B format.

The elastic angular distributions and (n,2n) double-differential cross sections which were calculated from the three-body model based on the Faddeev equation reproduced the experimental data fairly well. The calculation including higher partial-wave components of the nucleon-nucleon interaction, however, might be required in order to fit the n-²H data satisfactorily, as performed by Doleschall⁴⁷⁾.

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Acknowledgements

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Appendix

Here we describe the derivations of the elastic and breakup amplitudes from eq. (9).

First of all we define the following momentum coordinate in the three-body center-of-mass system:

$$\vec{p}_i = \vec{p}_{jk} = (\vec{k}_j - \vec{k}_k)/2, \quad (i \neq j \neq k),$$

$$\vec{q}_i = \vec{k}_i,$$

$$\epsilon = 3\vec{q}_i^2/4 + \vec{p}_i^2, \quad i=1,2,3,$$

where \vec{k}_i is the momentum of particle i and ϵ is the total kinetic energy of the three-body system.

If we decompose $T^{(i)}$ such as

$$T^{(i)} = \sum_{k=1}^3 T_{ik}, \quad (\text{A-1})$$

we get the following equation from eq. (9):

$$T_{ik} = T_i \delta_{ik} + \sum_{j=1}^3 (1 - \delta_{ij}) T_i G_0 T_{jk}. \quad (\text{A-2})$$

By defining a new operator $U_{ik} = T_{ik} - T_i \delta_{ik}$, we obtain

$$U_{ik} = T_i G_0 T_k (1 - \delta_{ik}) + \sum_{j=1}^3 (1 - \delta_{ij}) T_i G_0 U_{jk}. \quad (\text{A-3})$$

Furthermore eq. (A-3) can be rearranged by introducing $u_{ik} =$

$$G_0^{-1} T_i^{-1} U_{ik} T_k^{-1} G_0^{-1}:$$

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$$T^{(i)} = \sum_{k=1}^3 T_{ik}, \quad (A-1)$$

we get the following equation from eq. (9):

$$T_{ik} = T_i \delta_{ik} + \sum_{j=1}^3 (1 - \delta_{ij}) T_i G_0 T_{jk}. \quad (A-2)$$

By defining a new operator $U_{ik} = T_{ik} - T_i \delta_{ik}$, we obtain

$$U_{ik} = T_i G_0 T_k (1 - \delta_{ik}) + \sum_{j=1}^3 (1 - \delta_{ij}) T_i G_0 U_{jk}. \quad (A-3)$$

Furthermore eq. (A-3) can be rearranged by introducing $u_{ik} =$

$$G_0^{-1} T_i^{-1} U_{ik} T_k^{-1} G_0^{-1}:$$

$$u_{ik} = G_0^{-1}(1 - \delta_{ik}) + \sum_{j=1}^3 (1 - \delta_{ij}) T_j G_0 u_{jk}. \quad (\text{A-4})$$

Equation (A-4) is often referred to as the AGS equation⁴⁸⁾, and u_{ik} predicts the correct physical scattering amplitude.

Using the separable potential of eq. (10), we can write the two-body T-matrix as follows:

$$T_i(\epsilon) = |g_i\rangle \tau_i(\epsilon - 3\vec{q}_i^2/4) \langle g_i|, \quad (\text{A-5})$$

where $\langle \vec{p}|g_i\rangle = g_i(p)$ and τ_i can be obtained analytically,

$$\tau_i^{-1}(z) = \lambda_i^{-1} - \int d\vec{p}' g^2(p')/(z - p'^2). \quad (\text{A-6})$$

The free state for n-d system is represented by

$$|\phi_i\rangle = |\vec{q}_i\rangle |\chi_i\rangle, \quad (\text{A-7})$$

where $|\chi_i\rangle$ is the bound state for composite particle j+k (deuteron).

The bound state $|\chi_i\rangle$ is given by

$$|\chi_i\rangle = G_0 |g_i\rangle, \quad (\text{A-8})$$

which is derived from the equation $|\chi_i\rangle = G_0 V_i |\chi_i\rangle$ by using the separable potential.

From eqs. (A-4), (A-5), (A-7) and (A-8) the following coupled integral equations are obtained:

$$\begin{aligned} \langle \vec{q}_i | X_{ij} | \vec{q}_j \rangle &= \langle \vec{q}_i | Z_{ij} | \vec{q}_j \rangle + \sum_{k=1}^3 \int d\vec{q}'_k \langle \vec{q}_i | Z_{ik} | \vec{q}'_k \rangle \tau_k(\epsilon - 3\vec{q}'_k^2/4) \\ &\quad \langle \vec{q}'_k | X_{kj} | \vec{q}_j \rangle, \end{aligned} \quad (\text{A-9})$$

where $Z_{ij} = (1 - \delta_{ij}) \langle g_i | G_0 | g_j \rangle$ and $X_{ij} = \langle g_i | G_0 u_{ij} G_0 | g_j \rangle$.

By introducing the three-free-particle state $|\vec{qp}\rangle$ and the operator $u_{0i} = G_0^{-1} + \sum_{j=1}^3 T_j G_0 u_{ji}$, the breakup amplitude is given by

$$\langle \vec{qp} | u_{0i} | \phi_i \rangle = \sum_{j=1}^3 g_j(p) \tau_j(\epsilon - 3\vec{q}^2/4) \langle \vec{q} | X_{ji} | \vec{q}_i \rangle. \quad (\text{A-10})$$

After introducing spins and antisymmetrization into eqs. (A-9) and (A-10), the elastic and breakup amplitudes are obtained by solving the coupled integral equations.

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167.

Table I Measurements of the total cross sections.

Institute and Facility	Neutron Source and Energy	Method and Detector	Ref.
ANL Heavy water pile	Thermal	Transmission BF ₃ counter	7)
MUN Reactor	130 eV	Transmission	9)
RPI Linac	1.0 ~ 1000 keV	Transmission NaI	11)
WIS Van de Graaff	⁷ Li(p,n),p-T 0.26 ~ 2.96 MeV	Transmission Ionization chamber	12)
LAS Van de Graaff	p-T,D-D,D-T 0.27 ~ 22 MeV	Transmission Stilbene scintillator	13)
BNW Van de Graaff	Li(d,n) 2.5 ~ 15 MeV	Transmission Liquid scintillator	14)
WIS Tandem	p-T,D-D,D-T 1.5 ~ 27.5 MeV	Transmission Stilbene scintillator	15)
RPI Linac	0.5 ~ 30 MeV	Transmission Liquid scintillator	16)

Table II Measurements of the capture cross sections.

Institute and Facility	Neutron Source and Energy	Method and Detector	Ref.
ANL Reactor	Thermal	Activation Ionization chamber	17)
LAS Reactor	Thermal	Detection of γ -rays NaI	18)
ANL	Thermal	Detection of γ -rays	19)
CRC Reactor	Thermal	Activation Proportional counter	20)
JAERI Reactor	Thermal	Activation Liquid scintillator	21)
RBZ Cockcroft-Walton	14.4 MeV	Detection of ^3H Counter telescope	22)

Table III Measurements of the (n,2n) reaction cross sections.

Institute and Facility	Neutron Source and Energy	Method and Detector	Ref.
LRL Cyclotron	p-T,D-D 6.1 ~ 14.1 MeV	Coincidence Liquid scintillator	23)
FOA Van de Graaff	D-D 4.1 ~ 6.55 MeV	Correlation time Liquid scintillator	24)
SCT Van de Graaff	D-D,D-T 8.2 ~ 22 MeV	Detection of protons Liquid scintillator	25)

Table IV Measurements of the (n,2n) double-differential cross sections.

Institute	Neutron Source and Energy	Method and Detector	Angles (deg)	Ref.
PCF	D-T 14 MeV	Liquid scintillator	20	26)
OSL	D-T 14.7 MeV	Plastic scintillator	10,13,16, 20,28	27)
ETH	D-T 14.1 MeV	Liquid scintillator	7.5-75	3)
NIL	D-T 14.8 MeV	Scintillator	30-75	28)

Table V Scattering length and effective range parameters.

System	a (fm)	r_0 (fm)
n-p triplet	5.4	1.8
n-p singlet	-23.7	2.7
n-n singlet	-16.0	2.8

Table VI Evaluated neutron nuclear data of ^2H obtained in the present work. File 6 is not included in this listing.

.....10.....20.....30.....40.....50.....60.....	MAT	MF	MT	SEQ
1.00200+ 3	1.99700+ 0	0	0	0	9	102	1451	1	
0.0 + 0	0.0 + 0	0	0	1	0	102	1451	2	
						102	1451	3	
		1	451	12		102	1451	4	
		3	1	59		102	1451	5	
		3	2	59		102	1451	6	
		3	16	8		102	1451	7	
		3	102	31		102	1451	8	
		3	251	31		102	1451	9	
		4	2	274		102	1451	10	
		4	16	166		102	1451	11	
		5	16	368		102	1451	12	
						102	1	0	
						102	0	0	
1.00200+ 3	1.99700+ 0	0	0	0	0	102	3	1	
0.0 + 0	0.0 + 0	0	0	1	168	102	3	1	
168	5	0	0	0	0	102	3	1	
1.00000- 5	3.39000+ 0	3.00000- 5	3.39000+ 0	1.00000- 4	3.39000+ 0	102	3	1	
3.00000- 4	3.39000+ 0	1.00000- 3	3.39000+ 0	3.00000- 3	3.39000+ 0	102	3	1	
1.00000- 2	3.39000+ 0	2.53000- 2	3.39000+ 0	1.00000- 1	3.39000+ 0	102	3	1	
3.00000- 1	3.39000+ 0	1.00000+ 0	3.39000+ 0	3.00000+ 0	3.39000+ 0	102	3	1	
1.00000+ 1	3.39000+ 0	3.00000+ 1	3.39000+ 0	1.00000+ 2	3.39000+ 0	102	3	1	
1.30000+ 2	3.39000+ 0	2.00000+ 2	3.38870+ 0	3.00000+ 2	3.38746+ 0	102	3	1	
4.00000+ 2	3.38659+ 0	5.00000+ 2	3.38591+ 0	6.00000+ 2	3.38536+ 0	102	3	1	
7.00000+ 2	3.38489+ 0	8.00000+ 2	3.38448+ 0	9.00000+ 2	3.38413+ 0	102	3	1	
1.00000+ 3	3.38381+ 0	1.50000+ 3	3.38258+ 0	2.00000+ 3	3.38171+ 0	102	3	1	
2.50000+ 3	3.38104+ 0	3.00000+ 3	3.38049+ 0	3.50000+ 3	3.38002+ 0	102	3	1	
4.00000+ 3	3.37962+ 0	4.78160+ 3	3.37908+ 0	5.00000+ 3	3.37896+ 0	102	3	1	
6.00000+ 3	3.37849+ 0	7.00000+ 3	3.37809+ 0	7.12452+ 3	3.37805+ 0	102	3	1	
8.00000+ 3	3.37710+ 0	9.00000+ 3	3.37614+ 0	9.46746+ 3	3.37573+ 0	102	3	1	
1.00000+ 4	3.37470+ 0	1.10000+ 4	3.37290+ 0	1.20000+ 4	3.37126+ 0	102	3	1	
1.50000+ 4	3.36707+ 0	1.70000+ 4	3.36471+ 0	1.87256+ 4	3.36290+ 0	102	3	1	
2.00000+ 4	3.36057+ 0	2.50000+ 4	3.35271+ 0	2.79838+ 4	3.34875+ 0	102	3	1	
3.00000+ 4	3.34582+ 0	3.50000+ 4	3.33934+ 0	3.72420+ 4	3.33674+ 0	102	3	1	
4.00000+ 4	3.33468+ 0	4.97088+ 4	3.29317+ 0	5.00000+ 4	3.29234+ 0	102	3	1	
5.74441+ 4	3.27285+ 0	6.00000+ 4	3.26497+ 0	6.51794+ 4	3.25004+ 0	102	3	1	
7.00000+ 4	3.24021+ 0	7.29147+ 4	3.23461+ 0	8.00000+ 4	3.22379+ 0	102	3	1	
9.00000+ 4	3.21011+ 0	9.16821+ 4	3.20797+ 0	1.00000+ 5	3.19224+ 0	102	3	1	
1.10449+ 5	3.17435+ 0	1.29217+ 5	3.14158+ 0	1.47984+ 5	3.11753+ 0	102	3	1	
1.50000+ 5	3.11551+ 0	1.79382+ 5	3.08902+ 0	2.00000+ 5	3.07083+ 0	102	3	1	
2.10781+ 5	3.06209+ 0	2.42179+ 5	3.03896+ 0	2.50000+ 5	3.03449+ 0	102	3	1	
2.73577+ 5	3.02185+ 0	3.00000+ 5	3.01333+ 0	3.50000+ 5	2.99915+ 0	102	3	1	
3.73788+ 5	2.99312+ 0	4.00000+ 5	2.99008+ 0	4.73999+ 5	2.98248+ 0	102	3	1	
5.00000+ 5	2.98048+ 0	5.74209+ 5	2.97532+ 0	6.00000+ 5	2.97031+ 0	102	3	1	
6.74421+ 5	2.95702+ 0	7.00000+ 5	2.95055+ 0	7.39563+ 5	2.94102+ 0	102	3	1	
8.00000+ 5	2.92894+ 0	8.04706+ 5	2.92802+ 0	8.69849+ 5	2.91439+ 0	102	3	1	
9.00000+ 5	2.90596+ 0	9.34992+ 5	2.89655+ 0	9.59498+ 5	2.89149+ 0	102	3	1	
9.84005+ 5	2.88986+ 0	1.00000+ 6	2.88866+ 0	1.00851+ 6	2.88802+ 0	102	3	1	
1.03302+ 6	2.88238+ 0	1.12462+ 6	2.85196+ 0	1.21623+ 6	2.82487+ 0	102	3	1	

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
1.30783+	6 2.79917+	0 1.39944+	6 2.77289+	0 1.48668+	6 2.74405+	0	102	3	1 50
1.50000+	6 2.73886+	0 1.57392+	6 2.71103+	0 1.66117+	6 2.67634+	0	102	3	1 51
1.74841+	6 2.64247+	0 1.86296+	6 2.59976+	0 1.97751+	6 2.55682+	0	102	3	1 52
2.00000+	6 2.54795+	0 2.09206+	6 2.51297+	0 2.20661+	6 2.46752+	0	102	3	1 53
2.50000+	6 2.34941+	0 2.54258+	6 2.33387+	0 2.87854+	6 2.20615+	0	102	3	1 54
3.00000+	6 2.16006+	0 3.21451+	6 2.08519+	0 3.33872+	6 2.04121+	0	102	3	1 55
3.50000+	6 1.98777+	0 3.55048+	6 1.97184+	0 3.92774+	6 1.86017+	0	102	3	1 56
4.00000+	6 1.84127+	0 4.04574+	6 1.82957+	0 4.30500+	6 1.76699+	0	102	3	1 57
4.68225+	6 1.68692+	0 4.96815+	6 1.63129+	0 5.00000+	6 1.62541+	0	102	3	1 58
5.05951+	6 1.61457+	0 5.61545+	6 1.51858+	0 5.89056+	6 1.47597+	0	102	3	1 59
6.00000+	6 1.45989+	0 6.17139+	6 1.43563+	0 6.72732+	6 1.36261+	0	102	3	1 60
6.81297+	6 1.35184+	0 7.00000+	6 1.32906+	0 7.28326+	6 1.29638+	0	102	3	1 61
7.73539+	6 1.24756+	0 8.00000+	6 1.22108+	0 8.03102+	6 1.21807+	0	102	3	1 62
8.77878+	6 1.15170+	0 9.00000+	6 1.13332+	0 9.52654+	6 1.09241+	0	102	3	1 63
9.58021+	6 1.08806+	0 1.00000+	7 1.05545+	0 1.02743+	7 1.03537+	0	102	3	1 64
1.09804+	7 9.81954-	1 1.10000+	7 9.80467-	1 1.14250+	7 9.49369-	1	102	3	1 65
1.16865+	7 9.31277-	1 1.20000+	7 9.10006-	1 1.23926+	7 8.84791-	1	102	3	1 66
1.30000+	7 8.49411-	1 1.30988+	7 8.43943-	1 1.32699+	7 8.35381-	1	102	3	1 67
1.35877+	7 8.19988-	1 1.38741+	7 8.06656-	1 1.40000+	7 8.01546-	1	102	3	1 68
1.41000+	7 7.97544-	1 1.43025+	7 7.89583-	1 1.46495+	7 7.76380-	1	102	3	1 69
1.50000+	7 7.65022-	1 1.51147+	7 7.61397-	1 1.54249+	7 7.51816-	1	102	3	1 70
1.60000+	7 7.33706-	1 1.69595+	7 7.05788-	1 1.70000+	7 7.04668-	1	102	3	1 71
1.71088+	7 7.01680-	1 1.80000+	7 6.64478-	1 1.80174+	7 6.63789-	1	102	3	1 72
1.89259+	7 6.31353-	1 1.90000+	7 6.30380-	1 2.00000+	7 6.17747-	1	102	3	1 73
							102	3	0 74
1.00200+	3 1.99700+	0	0	0	0	0	102	3	2 75
0.0	+ 0 0.0	+ 0	0	0	1	168	102	3	2 76
	168	5	0	0	0	0	102	3	2 77
1.00000-	5 3.36234+	0 3.00000-	5 3.37403+	0 1.00000-	4 3.38125+	0	102	3	2 78
3.00000-	4 3.38495+	0 1.00000-	3 3.38723+	0 3.00000-	3 3.38840+	0	102	3	2 79
1.00000-	2 3.38912+	0 2.53000-	2 3.38945+	0 1.00000-	1 3.38972+	0	102	3	2 80
3.00000-	1 3.38984+	0 1.00000+	0 3.38991+	0 3.00000+	0 3.38995+	0	102	3	2 81
1.00000+	1 3.38997+	0 3.00000+	1 3.38998+	0 1.00000+	2 3.38999+	0	102	3	2 82
1.30000+	2 3.38999+	0 2.00000+	2 3.38869+	0 3.00000+	2 3.38746+	0	102	3	2 83
4.00000+	2 3.38659+	0 5.00000+	2 3.38591+	0 6.00000+	2 3.38536+	0	102	3	2 84
7.00000+	2 3.38489+	0 8.00000+	2 3.38448+	0 9.00000+	2 3.38413+	0	102	3	2 85
1.00000+	3 3.38381+	0 1.50000+	3 3.38258+	0 2.00000+	3 3.38171+	0	102	3	2 86
2.50000+	3 3.38104+	0 3.00000+	3 3.38049+	0 3.50000+	3 3.38002+	0	102	3	2 87
4.00000+	3 3.37962+	0 4.78160+	3 3.37908+	0 5.00000+	3 3.37896+	0	102	3	2 88
6.00000+	3 3.37849+	0 7.00000+	3 3.37809+	0 7.12452+	3 3.37805+	0	102	3	2 89
8.00000+	3 3.37710+	0 9.00000+	3 3.37614+	0 9.46746+	3 3.37573+	0	102	3	2 90
1.00000+	4 3.37470+	0 1.10000+	4 3.37290+	0 1.20000+	4 3.37126+	0	102	3	2 91
1.50000+	4 3.36707+	0 1.70000+	4 3.36471+	0 1.87256+	4 3.36290+	0	102	3	2 92
2.00000+	4 3.36057+	0 2.50000+	4 3.35271+	0 2.79838+	4 3.34875+	0	102	3	2 93
3.00000+	4 3.34582+	0 3.50000+	4 3.33934+	0 3.72420+	4 3.33674+	0	102	3	2 94
4.00000+	4 3.33468+	0 4.97088+	4 3.29317+	0 5.00000+	4 3.29234+	0	102	3	2 95
5.74441+	4 3.27285+	0 6.00000+	4 3.26497+	0 6.51794+	4 3.25004+	0	102	3	2 96
7.00000+	4 3.24021+	0 7.29147+	4 3.23461+	0 8.00000+	4 3.22379+	0	102	3	2 97
9.00000+	4 3.21011+	0 9.16821+	4 3.20797+	0 1.00000+	5 3.19224+	0	102	3	2 98
1.10449+	5 3.17435+	0 1.29217+	5 3.14158+	0 1.47984+	5 3.11753+	0	102	3	2 99
1.50000+	5 3.11551+	0 1.79382+	5 3.08902+	0 2.00000+	5 3.07083+	0	102	3	2 100
2.10781+	5 3.06209+	0 2.42179+	5 3.03896+	0 2.50000+	5 3.03449+	0	102	3	2 101
2.73577+	5 3.02185+	0 3.00000+	5 3.01333+	0 3.50000+	5 2.99915+	0	102	3	2 102
3.73788+	5 2.99312+	0 4.00000+	5 2.99008+	0 4.73999+	5 2.98248+	0	102	3	2 103
5.00000+	5 2.98048+	0 5.74209+	5 2.97532+	0 6.00000+	5 2.97031+	0	102	3	2 104

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
6.74421+	5 2.95701+	0 7.00000+	5 2.95055+	0 7.39563+	5 2.94102+	0	102	3	2 105
8.00000+	5 2.92893+	0 8.04706+	5 2.92802+	0 8.69849+	5 2.91439+	0	102	3	2 106
9.00000+	5 2.90596+	0 9.34992+	5 2.89654+	0 9.59498+	5 2.89148+	0	102	3	2 107
9.84005+	5 2.88985+	0 1.00000+	6 2.88865+	0 1.00851+	6 2.88801+	0	102	3	2 108
1.03302+	6 2.88237+	0 1.12462+	6 2.85195+	0 1.21623+	6 2.82486+	0	102	3	2 109
1.30783+	6 2.79916+	0 1.39944+	6 2.77288+	0 1.48668+	6 2.74404+	0	102	3	2 110
1.50000+	6 2.73885+	0 1.57392+	6 2.71102+	0 1.66117+	6 2.67633+	0	102	3	2 111
1.74841+	6 2.64246+	0 1.86296+	6 2.59975+	0 1.97751+	6 2.55681+	0	102	3	2 112
2.00000+	6 2.54794+	0 2.09206+	6 2.51296+	0 2.20661+	6 2.46751+	0	102	3	2 113
2.50000+	6 2.34940+	0 2.54258+	6 2.33386+	0 2.87854+	6 2.20614+	0	102	3	2 114
3.00000+	6 2.16005+	0 3.21451+	6 2.08518+	0 3.33872+	6 2.04120+	0	102	3	2 115
3.50000+	6 1.98511+	0 3.55048+	6 1.96837+	0 3.92774+	6 1.85101+	0	102	3	2 116
4.00000+	6 1.83108+	0 4.04574+	6 1.81874+	0 4.30500+	6 1.74882+	0	102	3	2 117
4.68225+	6 1.65883+	0 4.96815+	6 1.59620+	0 5.00000+	6 1.58947+	0	102	3	2 118
5.05951+	6 1.57706+	0 5.61545+	6 1.46724+	0 5.89056+	6 1.41829+	0	102	3	2 119
6.00000+	6 1.39957+	0 6.17139+	6 1.37127+	0 6.72732+	6 1.28588+	0	102	3	2 120
6.81297+	6 1.27329+	0 7.00000+	6 1.24644+	0 7.28326+	6 1.20780+	0	102	3	2 121
7.73539+	6 1.14992+	0 8.00000+	6 1.11831+	0 8.03102+	6 1.11471+	0	102	3	2 122
8.77878+	6 1.03474+	0 9.00000+	6 1.01256+	0 9.52654+	6 9.62973-	1	102	3	2 123
9.58021+	6 9.57769-	1 1.00000+	7 9.19071-	1 1.02743+	7 8.95158-	1	102	3	2 124
1.09804+	7 8.32318-	1 1.10000+	7 8.30578-	1 1.14250+	7 7.94105-	1	102	3	2 125
1.16865+	7 7.73459-	1 1.20000+	7 7.49201-	1 1.23926+	7 7.20353-	1	102	3	2 126
1.30000+	7 6.79573-	1 1.30988+	7 6.73251-	1 1.32699+	7 6.63224-	1	102	3	2 127
1.35877+	7 6.45310-	1 1.38741+	7 6.30192-	1 1.40000+	7 6.24308-	1	102	3	2 128
1.41000+	7 6.19696-	1 1.43025+	7 6.10514-	1 1.46495+	7 5.96655-	1	102	3	2 129
1.50000+	7 5.84649-	1 1.51147+	7 5.80816-	1 1.54249+	7 5.71312-	1	102	3	2 130
1.60000+	7 5.53341-	1 1.69595+	7 5.25643-	1 1.70000+	7 5.24523-	1	102	3	2 131
1.71088+	7 5.21535-	1 1.80000+	7 4.84333-	1 1.80174+	7 4.83644-	1	102	3	2 132
1.89259+	7 4.51208-	1 1.90000+	7 4.50235-	1 2.00000+	7 4.37602-	1	102	3	2 133
							102	3	0 134
1.00200+	3 1.99700+	0	0	0	0	0	102	3	16 135
0.0	+ 0-2.22463+	6	0	0	1	14	102	3	16 136
	14	3	0	0	0	0	102	3	16 137
3.33872+	6 0.0	+ 0 4.04574+	6 1.08174-	2 4.96815+	6 3.50845-	2	102	3	16 138
5.89056+	6 5.76744-	2 6.81297+	6 7.85382-	2 7.73539+	6 9.76269-	2	102	3	16 139
9.58021+	6 1.30284-	1 1.14250+	7 1.55254-	1 1.32699+	7 1.72147-	1	102	3	16 140
1.35877+	7 1.74668-	1 1.43025+	7 1.79060-	1 1.51147+	7 1.80572-	1	102	3	16 141
1.69595+	7 1.80136-	1 2.00000+	7 1.80137-	1			102	3	16 142
							102	3	0 143
1.00200+	3 1.99700+	0	0	0	0	0	102	3102	144
0.0	+ 0 6.25733+	6	0	0	1	83	102	3102	145
	83	5	0	0	0	0	102	3102	146
1.00000-	5 2.76644-	2 3.00000-	5 1.59721-	2 1.00000-	4 8.74826-	3	102	3102	147
3.00000-	4 5.05081-	3 1.00000-	3 2.76645-	3 3.00000-	3 1.59721-	3	102	3102	148
1.00000-	2 8.74827-	4 2.53000-	2 5.50000-	4 1.00000-	1 2.76646-	4	102	3102	149
3.00000-	1 1.59724-	4 1.00000+	0 8.74888-	5 3.00000+	0 5.05188-	5	102	3102	150
1.00000+	1 2.76839-	5 3.00000+	1 1.60058-	5 1.00000+	2 8.80983-	6	102	3102	151
2.00000+	2 6.27302-	6 3.00000+	2 5.15744-	6 4.00000+	2 4.49726-	6	102	3102	152
5.00000+	2 4.04999-	6 6.00000+	2 3.72225-	6 7.00000+	2 3.46940-	6	102	3102	153
8.00000+	2 3.26710-	6 9.00000+	2 3.10077-	6 1.00000+	3 2.96111-	6	102	3102	154
1.50000+	3 2.49720-	6 2.00000+	3 2.23146-	6 2.50000+	3 2.05743-	6	102	3102	155
3.00000+	3 1.93435-	6 3.50000+	3 1.84287-	6 4.00000+	3 1.77249-	6	102	3102	156
5.00000+	3 1.67238-	6 6.00000+	3 1.60611-	6 7.00000+	3 1.56051-	6	102	3102	157
8.00000+	3 1.52851-	6 9.00000+	3 1.50590-	6 1.00000+	4 1.49014-	6	102	3102	158
1.50000+	4 1.46772-	6 2.00000+	4 1.48837-	6 2.50000+	4 1.52546-	6	102	3102	159

	10	20	30	40	50	60	MAT	MF	MT	SEQ					
3.00000+	4	1.56981-	6	3.50000+	4	1.61738-	6	4.00000+	4	1.66624-	6	102	3102	160	
5.00000+	4	1.76448-	6	6.00000+	4	1.86074-	6	7.00000+	4	1.95387-	6	102	3102	161	
8.00000+	4	2.04374-	6	9.00000+	4	2.13035-	6	1.00000+	5	2.21395-	6	102	3102	162	
1.50000+	5	2.59269-	6	2.00000+	5	2.92176-	6	2.50000+	5	3.21528-	6	102	3102	163	
3.00000+	5	3.48175-	6	3.50000+	5	3.72696-	6	4.00000+	5	3.95473-	6	102	3102	164	
5.00000+	5	4.36854-	6	6.00000+	5	4.73845-	6	7.00000+	5	5.07417-	6	102	3102	165	
8.00000+	5	5.38189-	6	9.00000+	5	5.66633-	6	1.00000+	6	5.93056-	6	102	3102	166	
1.50000+	6	7.02678-	6	2.00000+	6	7.85886-	6	2.50000+	6	8.50971-	6	102	3102	167	
3.00000+	6	9.02604-	6	3.50000+	6	9.43672-	6	4.00000+	6	9.76169-	6	102	3102	168	
5.00000+	6	1.02128-	5	6.00000+	6	1.04637-	5	7.00000+	6	1.05709-	5	102	3102	169	
8.00000+	6	1.05722-	5	9.00000+	6	1.04960-	5	1.00000+	7	1.03628-	5	102	3102	170	
1.10000+	7	1.01884-	5	1.20000+	7	9.98433-	6	1.30000+	7	9.75941-	6	102	3102	171	
1.40000+	7	9.52062-	6	1.41000+	7	9.49613-	6	1.50000+	7	9.27327-	6	102	3102	172	
1.60000+	7	9.02164-	6	1.70000+	7	8.76841-	6	1.80000+	7	8.51637-	6	102	3102	173	
1.90000+	7	8.26685-	6	2.00000+	7	8.02152-	6					102	3102	174	
												102	3	0	175
1.00200+	3	1.99700+	0	0	0	0	0	0	0	0	0	102	3251	176	
0.0	+ 0	0.0	+ 0	0	0	0	0	1	83	102	3251	177			
	83		2	0	0	0	0	0	0	0	102	3251	178		
1.00000-	5	3.33472-	1	3.00000-	5	3.33472-	1	1.00000-	4	3.33472-	1	102	3251	179	
3.00000-	4	3.33472-	1	1.00000-	3	3.33472-	1	3.00000-	3	3.33472-	1	102	3251	180	
1.00000-	2	3.33472-	1	2.53000-	2	3.33472-	1	1.00000-	1	3.33472-	1	102	3251	181	
3.00000-	1	3.33472-	1	1.00000+	0	3.33471-	1	3.00000+	0	3.33470-	1	102	3251	182	
1.00000+	1	3.33464-	1	3.00000+	1	3.33448-	1	1.00000+	2	3.33392-	1	102	3251	183	
2.00000+	2	3.33311-	1	3.00000+	2	3.33231-	1	4.00000+	2	3.33151-	1	102	3251	184	
5.00000+	2	3.33071-	1	6.00000+	2	3.32991-	1	7.00000+	2	3.32911-	1	102	3251	185	
8.00000+	2	3.32830-	1	9.00000+	2	3.32750-	1	1.00000+	3	3.32670-	1	102	3251	186	
1.50000+	3	3.32270-	1	2.00000+	3	3.31870-	1	2.50000+	3	3.31470-	1	102	3251	187	
3.00000+	3	3.31070-	1	3.50000+	3	3.30670-	1	4.00000+	3	3.30271-	1	102	3251	188	
5.00000+	3	3.29474-	1	6.00000+	3	3.28678-	1	7.00000+	3	3.27882-	1	102	3251	189	
8.00000+	3	3.27088-	1	9.00000+	3	3.26296-	1	1.00000+	4	3.25503-	1	102	3251	190	
1.50000+	4	3.21562-	1	2.00000+	4	3.17648-	1	2.50000+	4	3.13764-	1	102	3251	191	
3.00000+	4	3.09909-	1	3.50000+	4	3.06084-	1	4.00000+	4	3.02290-	1	102	3251	192	
5.00000+	4	2.94795-	1	6.00000+	4	2.87426-	1	7.00000+	4	2.80186-	1	102	3251	193	
8.00000+	4	2.73080-	1	8.99999+	4	2.66106-	1	1.00000+	5	2.59269-	1	102	3251	194	
1.50000+	5	2.27181-	1	2.00000+	5	1.98669-	1	2.50000+	5	1.73749-	1	102	3251	195	
3.00000+	5	1.52314-	1	3.50000+	5	1.34204-	1	4.00000+	5	1.19187-	1	102	3251	196	
5.00000+	5	9.73895-	2	6.00000+	5	8.47490-	2	7.00000+	5	7.91832-	2	102	3251	197	
8.00000+	5	7.89020-	2	9.00000+	5	8.24460-	2	1.00000+	6	8.86813-	2	102	3251	198	
1.50000+	6	1.36547-	1	2.00000+	6	1.85630-	1	2.50000+	6	2.26063-	1	102	3251	199	
3.00000+	6	2.57866-	1	3.50000+	6	2.82468-	1	4.00000+	6	3.01631-	1	102	3251	200	
5.00000+	6	3.32785-	1	6.00000+	6	3.59082-	1	7.00000+	6	3.85706-	1	102	3251	201	
8.00000+	6	4.04767-	1	9.00000+	6	4.27533-	1	1.00000+	7	4.47851-	1	102	3251	202	
1.10000+	7	4.62878-	1	1.20000+	7	4.76262-	1	1.30000+	7	4.89972-	1	102	3251	203	
1.40000+	7	5.03456-	1	1.41000+	7	5.04769-	1	1.50000+	7	5.16288-	1	102	3251	204	
1.60000+	7	5.28316-	1	1.70000+	7	5.39448-	1	1.80000+	7	5.49680-	1	102	3251	205	
1.90000+	7	5.59025-	1	2.00000+	7	5.67535-	1					102	3251	206	
												102	3	0	207
												102	0	0	208
1.00200+	3	1.99700+	0	1	1	0	0	0	0	0	0	102	4	2	209
0.0	+ 0	1.99700+	0	0	2	121	10	102	4	2	210				
1.00000+	0	3.33834-	1	5.21164-	2	-6.99586-	8	0.0	+ 0	0.0	+ 0	102	4	2	211
0.0	+ 0	0.0	+ 0	0.0	+ 0	0.0	+ 0	0.0	+ 0	0.0	+ 0	102	4	2	212
8.49549-	1	5.55864-	1	1.71940-	1	0.0	+ 0	0.0	+ 0	0.0	+ 0	102	4	2	213
0.0	+ 0	0.0	+ 0	0.0	+ 0	0.0	+ 0	0.0	+ 0	-2.62083-	1	102	4	2	214

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
6.34192-	1 0.0	+ 0 0.0	+ 0 0.0	+ 0 0.0	+ 0 0.0	+ 0	102	4	2 215
0.0	+ 0 0.0	+ 0 0.0	+ 0 0.0	+ 0 1.15520-	1-3.82912-	1	102	4	2 216
3.54868-	1 5.19221-	2 1.54098-	2-2.37759-	3 0.0	+ 0 0.0	+ 0	102	4	2 217
0.0	+ 0 0.0	+ 0 0.0	+ 0-5.45771-	2 2.19811-	1-3.92406-	1	102	4	2 218
2.56951-	1 1.15629-	1 3.89843-	2 0.0	+ 0 0.0	+ 0 0.0	+ 0	102	4	2 219
0.0	+ 0 0.0	+ 0 2.64417-	2-1.22564-	1 2.93253-	1-3.85685-	1	102	4	2 220
1.29640-	1 0.0	+ 0 0.0	+ 0 0.0	+ 0 0.0	+ 0 0.0	+ 0	102	4	2 221
0.0	+ 0-1.29632-	2 6.70572-	2-1.93379-	1 3.50574-	1-3.23763-	1	102	4	2 222
5.70647-	3 4.08215-	3 3.46762-	3-3.29421-	4 2.34290-	4 0.0	+ 0	102	4	2 223
6.39657-	3-3.61985-	2 1.19633-	1-2.65825-	1 3.65709-	1-2.22727-	1	102	4	2 224
-5.72884-	2-5.26775-	3 4.63717-	3 5.28295-	4 0.0	+ 0-3.16873-	3	102	4	2 225
1.93335-	2-7.10789-	2 1.83204-	1-3.20930-	1 3.34576-	1-1.16636-	1	102	4	2 226
-9.32549-	2-2.65259-	2 1.23066-	3 0.0	+ 0 1.57373-	3-1.02017-	2	102	4	2 227
4.08951-	2-1.19352-	1 2.46603-	1-3.45831-	1 2.67670-	1-1.67037-	2	102	4	2 228
-9.75689-	2-5.08132-	2 0.0	+ 0-7.82944-	4 5.13052-	3-2.35196-	2	102	4	2 229
7.37902-	2-1.75875-	1 2.98455-	1-3.35216-	1 1.75287-	1 6.05706-	2	102	4	2 230
-7.41360-	2						102	4	2 231
0.0	+ 0 0.0	+ 0	0	0	1	83	102	4	2 232
	83	2	0	0	0	0	102	4	2 233
0.0	+ 0 1.00000-	5	0	0	10	0	102	4	2 234
-9.43670-	12-8.27130-	10-9.56040-	18-4.35720-	10-1.91360-	17 3.65520-	19	102	4	2 235
2.30430-	26 9.16820-	20 8.39306-	27 1.93110-	34			102	4	2 236
0.0	+ 0 3.00000-	5	0	0	10	0	102	4	2 237
-2.83100-	11-8.27130-	10-2.86810-	17-4.35720-	10 9.57820-	18 3.65520-	19	102	4	2 238
1.79020-	27 9.16820-	20-4.19660-	27 4.82756-	35			102	4	2 239
0.0	+ 0 1.00000-	4	0	0	10	0	102	4	2 240
-9.43666-	11-8.27130-	10-9.48010-	18-4.35720-	10 3.83070-	17 3.65520-	19	102	4	2 241
-3.46760-	26 9.16820-	20-1.67860-	26 7.72426-	34			102	4	2 242
0.0	+ 0 3.00000-	4	0	0	10	0	102	4	2 243
-2.83100-	10-8.27130-	10 4.81150-	17-4.35720-	10-9.48150-	18 3.65520-	19	102	4	2 244
-9.39666-	27 9.16820-	20 4.19660-	27 4.82756-	35			102	4	2 245
0.0	+ 0 1.00000-	3	0	0	10	0	102	4	2 246
-9.43680-	10-8.27130-	10 8.92570-	19-4.35720-	10-2.84150-	17 3.65520-	19	102	4	2 247
2.88590-	26 9.16820-	20 1.25900-	26 4.34500-	34			102	4	2 248
0.0	+ 0 3.00000-	3	0	0	10	0	102	4	2 249
-2.83100-	9-8.27130-	10 3.13860-	17-4.35720-	10-4.69680-	17 3.65520-	19	102	4	2 250
3.66890-	26 9.16820-	20 2.09830-	26 1.20690-	33			102	4	2 251
0.0	+ 0 1.00000-	2	0	0	10	0	102	4	2 252
-9.43680-	9-8.27130-	10 8.92570-	18-4.35720-	10 6.99150-	17 3.65520-	19	102	4	2 253
-6.73380-	26 9.16820-	20-2.93760-	26 2.36560-	33			102	4	2 254
0.0	+ 0 2.53000-	2	0	0	10	0	102	4	2 255
-2.38750-	8-8.27130-	10 2.25820-	17-4.35720-	10 7.41140-	18 3.65520-	19	102	4	2 256
1.87390-	37 9.16820-	20 7.79498-	38 3.08480-	56			102	4	2 257
0.0	+ 0 1.00000-	1	0	0	10	0	102	4	2 258
-9.43680-	8-8.27120-	10 7.01180-	17-4.35720-	10 9.62790-	17 3.65510-	19	102	4	2 259
-5.97320-	26 9.16820-	20-2.93760-	26 2.36560-	33			102	4	2 260
0.0	+ 0 3.00000-	1	0	0	10	0	102	4	2 261
-2.83100-	7-8.27090-	10 3.25190-	16-4.35720-	10 1.35730-	16 3.65510-	19	102	4	2 262
-7.09180-	26 9.16820-	20-2.09830-	26 1.20690-	33			102	4	2 263
0.0	+ 0 1.00000+	0	0	0	10	0	102	4	2 264
-9.43680-	7-8.26720-	10 1.12220-	15-4.35720-	10 5.51310-	16 3.65300-	19	102	4	2 265
-3.50980-	25 9.16820-	20-1.13310-	25 3.51940-	32			102	4	2 266
0.0	+ 0 3.00000+	0	0	0	10	0	102	4	2 267
-2.83100-	6-8.23460-	10 3.42190-	15-4.35720-	10 1.64440-	15 3.63520-	19	102	4	2 268
-1.06550-	24 9.16820-	20-3.35730-	25 3.08980-	31			102	4	2 269

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
0.0	+ 0	1.00000+ 1	0	0	10	0	102	4	2 270
-9.43670-	6-	7.86450-10	1.13020-14-	4.35720-10	5.51310-15	3.43090-19	102	4	2 271
-3.54560-	24	9.16820-20-	1.13310-24	3.51950-30			102	4	2 272
0.0	+ 0	3.00000+ 1	0	0	10	0	102	4	2 273
-2.83100-	5-	4.61130-10	3.14950-14-	4.35710-10	1.65300-14	1.63810-19	102	4	2 274
-9.76380-	24	9.16809-20-	3.39510-24	3.15970-29			102	4	2 275
0.0	+ 0	1.00000+ 2	0	0	10	0	102	4	2 276
-9.43600-	5	3.23910- 9	8.76120-15-	4.35690-10	5.50240-14-	1.87060-18	102	4	2 277
2.11510-	24	9.16790-20-	1.12850-23	3.49110-28			102	4	2 278
0.0	+ 0	2.00000+ 2	0	0	10	0	102	4	2 279
-1.88700-	4	1.54360- 8-	6.17800-13-	4.35660-10	1.10040-13-	8.57890-18	102	4	2 280
2.32710-	22	9.16760-20-	2.25700-23	1.39650-27			102	4	2 281
0.0	+ 0	3.00000+ 2	0	0	10	0	102	4	2 282
-2.83030-	4	3.57610- 8-	2.51450-12-	4.35630-10	1.65120-13-	1.97710-17	102	4	2 283
9.20670-	22	9.16730-20-	3.38810-23	3.14710-27			102	4	2 284
0.0	+ 0	4.00000+ 2	0	0	10	0	102	4	2 285
-3.77350-	4	6.42110- 8-	6.31590-12-	4.35600-10	2.20160-13-	3.54340-17	102	4	2 286
2.29420-	21	9.16700-20-	4.51800-23	5.59628-27			102	4	2 287
0.0	+ 0	5.00000+ 2	0	0	10	0	102	4	2 288
-4.71640-	4	1.00790- 7-	1.26560-11-	4.35560-10	2.75140-13-	5.55520-17	102	4	2 289
4.58010-	21	9.16657-20-	5.64540-23	8.73786-27			102	4	2 290
0.0	+ 0	6.00000+ 2	0	0	10	0	102	4	2 291
-5.65930-	4	1.45480- 7-	2.21680-11-	4.35530-10	3.30100-13-	8.01330-17	102	4	2 292
8.00660-	21	9.16630-20-	6.77240-23	1.25750-26			102	4	2 293
0.0	+ 0	7.00000+ 2	0	0	10	0	102	4	2 294
-6.60190-	4	1.98290- 7-	3.54860-11-	4.35500-10	3.85130-13-	1.09210-16	102	4	2 295
1.28050-	20	9.16590-20-	7.90237-23	1.71230-26			102	4	2 296
0.0	+ 0	8.00000+ 2	0	0	10	0	102	4	2 297
-7.54450-	4	2.59220- 7-	5.32420-11-	4.35460-10	4.40060-13-	1.42710-16	102	4	2 298
1.91950-	20	9.16540-20-	9.02812-23	2.23500-26			102	4	2 299
0.0	+ 0	9.00000+ 2	0	0	10	0	102	4	2 300
-8.48680-	4	3.28260- 7-	7.60688-11-	4.35430-10	4.95060-13-	1.80720-16	102	4	2 301
2.74150-	20	9.16489-20-	1.01570-22	2.82910-26			102	4	2 302
0.0	+ 0	1.00000+ 3	0	0	10	0	102	4	2 303
-9.42900-	4	4.05420- 7-	1.04600-10-	4.35390-10	5.50010-13-	2.23160-16	102	4	2 304
3.76820-	20	9.16428-20-	1.12850-22	3.49200-26			102	4	2 305
0.0	+ 0	1.50000+ 3	0	0	10	0	102	4	2 306
-1.41380-	3	9.12760- 7-	3.54870-10-	4.35130-10	8.24660-13-	5.02310-16	102	4	2 307
1.27740-	19	9.15980-20-	1.69200-22	7.85289-26			102	4	2 308
0.0	+ 0	2.00000+ 3	0	0	10	0	102	4	2 309
-1.88430-	3	1.62250- 6-	8.42260-10-	4.34700-10	1.09890-12-	8.92710-16	102	4	2 310
3.03050-	19	9.15040-20-	2.25470-22	1.39490-25			102	4	2 311
0.0	+ 0	2.50000+ 3	0	0	10	0	102	4	2 312
-2.35440-	3	2.53430- 6-	1.64530- 9-	4.33970-10	1.37280-12-	1.39420-15	102	4	2 313
5.91810-	19	9.13218-20-	2.81650-22	2.17800-25			102	4	2 314
0.0	+ 0	3.00000+ 3	0	0	10	0	102	4	2 315
-2.82410-	3	3.64790- 6-	2.84220- 9-	4.32760-10	1.64580-12-	2.00610-15	102	4	2 316
1.02190-	18	9.10068-20-	3.37630-22	3.13290-25			102	4	2 317
0.0	+ 0	3.50000+ 3	0	0	10	0	102	4	2 318
-3.29340-	3	4.96300- 6-	4.51100- 9-	4.30860-10	1.91790-12-	2.72820-15	102	4	2 319
1.62130-	18	9.04980-20-	3.93420-22	4.25980-25			102	4	2 320
0.0	+ 0	4.00000+ 3	0	0	10	0	102	4	2 321
-3.76240-	3	6.47920- 6-	6.72930- 9-	4.28040-10	2.18860-12-	3.55970-15	102	4	2 322
2.41730-	18	8.97280-20-	4.48880-22	5.55720-25			102	4	2 323
0.0	+ 0	5.00000+ 3	0	0	10	0	102	4	2 324

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
-4.69910- 3	1.01140- 5	-1.31250- 8	-4.18450-10	2.72290-12	-5.54580-15	102	4	2	325
4.70630-18	8.70790-20	-5.58170-22	8.65430-25			102	4	2	326
0.0 + 0	6.00000+ 3	0	0	10	0	102	4	2	327
-5.63430- 3	1.45500- 5	-2.26450- 8	-4.01310-10	3.24160-12	-7.94970-15	102	4	2	328
8.09500-18	8.23190-20	-6.63870-22	1.23990-24			102	4	2	329
0.0 + 0	7.00000+ 3	0	0	10	0	102	4	2	330
-6.56790- 3	1.97840- 5	-3.59020- 8	-3.73350-10	3.73450-12	-1.07470-14	102	4	2	331
1.27710-17	7.45680-20	-7.63630-22	1.67490-24			102	4	2	332
0.0 + 0	8.00000+ 3	0	0	10	0	102	4	2	333
-7.49990- 3	2.58140- 5	-5.35040- 8	-3.30730-10	4.18720-12	-1.38990-14	102	4	2	334
1.88900-17	6.28360-20	-8.54210-22	2.16400-24			102	4	2	335
0.0 + 0	9.00000+ 3	0	0	10	0	102	4	2	336
-8.43040- 3	3.26370- 5	-7.60560- 8	-2.69070-10	4.58070-12	-1.73470-14	102	4	2	337
2.65620-17	4.60680-20	-9.31480-22	2.69760-24			102	4	2	338
0.0 + 0	1.00000+ 4	0	0	10	0	102	4	2	339
-9.35940- 3	4.02510- 5	-1.04160- 7	-1.83390-10	4.89080-12	-2.10060-14	102	4	2	340
3.58240-17	2.32080-20	-9.90310-22	3.26180-24			102	4	2	341
0.0 + 0	1.50000+ 4	0	0	10	0	102	4	2	342
-1.39800- 2	9.01000- 5	-3.48630- 7	8.17180-10	3.89840-12	-3.68830-14	102	4	2	343
9.84060-17	-2.04750-19	-7.86479-22	5.71330-24			102	4	2	344
0.0 + 0	2.00000+ 4	0	0	10	0	102	4	2	345
-1.85610- 2	1.59350- 4	-8.19480- 7	3.47260- 9	-6.86400-12	-1.76300-14	102	4	2	346
9.73760-17	-4.58700-19	5.26030-22	4.33010-24			102	4	2	347
0.0 + 0	2.50000+ 4	0	0	10	0	102	4	2	348
-2.31020- 2	2.47680- 4	-1.58720- 6	8.99450- 9	-3.97800-11	1.26520-13	102	4	2	349
-3.50840-16	6.48770-19	-3.67050-22	6.29500-26			102	4	2	350
0.0 + 0	3.00000+ 4	0	0	10	0	102	4	2	351
-2.76030- 2	3.54790- 4	-2.71960- 6	1.88980- 8	-1.14620-10	5.76880-13	102	4	2	352
-2.25960-15	8.17410-18	-2.32920-20	4.10790-23			102	4	2	353
0.0 + 0	3.50000+ 4	0	0	10	0	102	4	2	354
-3.20620- 2	4.80360- 4	-4.28230- 6	3.49830- 8	-2.60030-10	1.65160-12	102	4	2	355
-7.80230-15	3.55710-17	-1.36150-19	3.61380-22			102	4	2	356
0.0 + 0	4.00000+ 4	0	0	10	0	102	4	2	357
-3.64790- 2	6.24070- 4	-6.33830- 6	5.93170- 8	-5.14800-10	3.85800-12	102	4	2	358
-2.10600-14	1.12760-16	-5.20120-19	1.73080-21			102	4	2	359
0.0 + 0	5.00000+ 4	0	0	10	0	102	4	2	360
-4.51880- 2	9.64690- 4	-1.21710- 5	1.42240- 7	-1.56570- 9	1.49940-11	102	4	2	361
-1.02760-13	6.99670-16	-4.18650-18	1.85780-20			102	4	2	362
0.0 + 0	6.00000+ 4	0	0	10	0	102	4	2	363
-5.37260- 2	1.37410- 3	-2.06750- 5	2.88920- 7	-3.82400- 9	4.41540-11	102	4	2	364
-3.62240-13	2.96730-15	-2.15110-17	1.16690-19			102	4	2	365
0.0 + 0	7.00000+ 4	0	0	10	0	102	4	2	366
-6.20920- 2	1.84990- 3	-3.22730- 5	5.23850- 7	-8.07300- 9	1.08700-10	102	4	2	367
-1.03580-12	9.88300-15	-8.36950-17	5.32360-19			102	4	2	368
0.0 + 0	8.00000+ 4	0	0	10	0	102	4	2	369
-7.02810- 2	2.38950- 3	-4.73530- 5	8.74300- 7	-1.53450- 8	2.35540-10	102	4	2	370
-2.55200-12	2.77400-14	-2.68000-16	1.94820-18			102	4	2	371
0.0 + 0	8.99999+ 4	0	0	10	0	102	4	2	372
-7.82940- 2	2.99050- 3	-6.62680- 5	1.36990- 6	-2.69370- 8	4.63580-10	102	4	2	373
-5.62020-12	6.84650-14	-7.41780-16	6.05340-18			102	4	2	374
0.0 + 0	1.00000+ 5	0	0	10	0	102	4	2	375
-8.61270- 2	3.65050- 3	-8.93400- 5	2.04220- 6	-4.44210- 8	8.46210-10	102	4	2	376
-1.13360-11	1.52800-13	-1.83250-15	1.65630-17			102	4	2	377
0.0 + 0	1.50000+ 5	0	0	10	0	102	4	2	378
-1.22570- 1	7.74990- 3	-2.76270- 4	9.24890- 6	-2.94810- 7	8.25270- 9	102	4	2	379

	10	20	30	40	50	60	MAT	MF	MT	SEQ					
-1.61320	-10	3.19110	-12	-5.61670	-14	7.45840	-16		102	4	2	380			
0.0	+ 0	2.00000	+ 5	0	0	0	10		0	102	4	2	381		
-1.54440	- 1	1.29710	- 2	-5.99350	- 4	2.61440	- 5	-1.08560	- 6	3.96900	- 8	102	4	2	382
-1.00730	- 9	2.59940	-11	-5.96560	-13	1.03330	-14					102	4	2	383
0.0	+ 0	2.50000	+ 5	0	0	0	10		0	102	4	2	384		
-1.81800	- 1	1.90470	- 2	-1.07060	- 3	5.70940	- 5	-2.89740	- 6	1.29760	- 7	102	4	2	385
-4.01340	- 9	1.26720	-10	-3.55650	-12	7.53500	-14					102	4	2	386
0.0	+ 0	3.00000	+ 5	0	0	0	10		0	102	4	2	387		
-2.04850	- 1	2.57390	- 2	-1.69130	- 3	1.05950	- 4	-6.31200	- 6	3.32610	- 7	102	4	2	388
-1.20490	- 8	4.47150	-10	-1.47400	-11	3.66920	-13					102	4	2	389
0.0	+ 0	3.50000	+ 5	0	0	0	10		0	102	4	2	390		
-2.23840	- 1	3.28430	- 2	-2.45520	- 3	1.75780	- 4	-1.19600	- 5	7.21320	- 7	102	4	2	391
-2.97880	- 8	1.26390	- 9	-4.76020	-11	1.35420	-12					102	4	2	392
0.0	+ 0	4.00000	+ 5	0	0	0	10		0	102	4	2	393		
-2.39100	- 1	4.01840	- 2	-3.35100	- 3	2.68810	- 4	-2.04740	- 5	1.38510	- 6	102	4	2	394
-6.39440	- 8	3.03990	- 9	-1.28210	-10	4.08570	-12					102	4	2	395
0.0	+ 0	5.00000	+ 5	0	0	0	10		0	102	4	2	396		
-2.59830	- 1	5.50390	- 2	-5.47990	- 3	5.29240	- 4	-4.84240	- 5	3.95090	- 6	102	4	2	397
-2.18750	- 7	1.25140	- 8	-6.34260	-10	2.43040	-11					102	4	2	398
0.0	+ 0	6.00000	+ 5	0	0	0	10		0	102	4	2	399		
-2.69860	- 1	6.94880	- 2	-7.95500	- 3	8.90200	- 4	-9.41260	- 5	8.90700	- 6	102	4	2	400
-5.69770	- 7	3.77140	- 8	-2.20910	- 9	9.78946	-11					102	4	2	401
0.0	+ 0	7.00000	+ 5	0	0	0	10		0	102	4	2	402		
-2.71800	- 1	8.30610	- 2	-1.06590	- 2	1.34670	- 3	-1.60280	- 4	1.71300	- 5	102	4	2	403
-1.23450	- 6	9.20600	- 8	-6.06830	- 9	3.02850	-10					102	4	2	404
0.0	+ 0	8.00000	+ 5	0	0	0	10		0	102	4	2	405		
-2.67840	- 1	9.55250	- 2	-1.34950	- 2	1.88940	- 3	-2.48350	- 4	2.94090	- 5	102	4	2	406
-2.34500	- 6	1.93260	- 7	-1.40640	- 8	7.75440	-10					102	4	2	407
0.0	+ 0	9.00000	+ 5	0	0	0	10		0	102	4	2	408		
-2.59730	- 1	1.06810	- 1	-1.63870	- 2	2.50700	- 3	-3.58820	- 4	4.64050	- 5	102	4	2	409
-4.03890	- 6	3.62580	- 7	-2.87110	- 8	1.72390	- 9					102	4	2	410
0.0	+ 0	1.00000	+ 6	0	0	0	10		0	102	4	2	411		
-2.48810	- 1	1.16920	- 1	-1.92790	- 2	3.18820	- 3	-4.91380	- 4	6.86320	- 5	102	4	2	412
-6.45210	- 6	6.23820	- 7	-5.31560	- 8	3.43700	- 9					102	4	2	413
0.0	+ 0	1.50000	+ 6	0	0	0	10		0	102	4	2	414		
-1.79150	- 1	1.52900	- 1	-3.27450	- 2	7.20840	- 3	-1.44860	- 3	2.67340	- 4	102	4	2	415
-3.33990	- 5	4.20410	- 6	-4.64990	- 7	3.91630	- 8					102	4	2	416
0.0	+ 0	2.00000	+ 6	0	0	0	10		0	102	4	2	417		
-1.13370	- 1	1.72600	- 1	-4.37780	- 2	1.16490	- 2	-2.76910	- 3	6.11860	- 4	102	4	2	418
-9.22170	- 5	1.36840	- 5	-1.78270	- 6	1.77320	- 7					102	4	2	419
0.0	+ 0	2.50000	+ 6	0	0	0	10		0	102	4	2	420		
-6.08030	- 2	1.83500	- 1	-5.25050	- 2	1.60550	- 2	-4.29280	- 3	1.07960	- 3	102	4	2	421
-1.86250	- 4	3.09720	- 5	-4.52450	- 6	5.05570	- 7					102	4	2	422
0.0	+ 0	3.00000	+ 6	0	0	0	10		0	102	4	2	423		
-2.01630	- 2	1.89540	- 1	-5.93590	- 2	2.02240	- 2	-5.90260	- 3	1.63890	- 3	102	4	2	424
-3.13270	- 4	5.66550	- 5	-9.01730	- 6	1.09880	- 6					102	4	2	425
0.0	+ 0	3.50000	+ 6	0	0	0	10		0	102	4	2	426		
1.09870	- 2	1.93000	- 1	-6.47790	- 2	2.40960	- 2	-7.52690	- 3	2.26160	- 3	102	4	2	427
-4.68700	- 4	9.04140	- 5	-1.53900	- 5	2.00590	- 6					102	4	2	428
0.0	+ 0	4.00000	+ 6	0	0	0	10		0	102	4	2	429		
3.51550	- 2	1.95170	- 1	-6.90400	- 2	2.76580	- 2	-9.12130	- 3	2.92420	- 3	102	4	2	430
-6.47350	- 4	1.31430	- 4	-2.36210	- 5	3.24930	- 6					102	4	2	431
0.0	+ 0	5.00000	+ 6	0	0	0	10		0	102	4	2	432		
7.35760	- 2	1.96510	- 1	-7.42990	- 2	3.36370	- 2	-1.20280	- 2	4.26970	- 3	102	4	2	433
-1.04580	- 3	2.29170	- 4	-4.47660	- 5	6.67770	- 6					102	4	2	434

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
0.0	+ 0	6.00000+	6	0	0	10	0	102 4 2	435
1.05280-	1	1.96440-	1-7.63710-	2	3.82600-	2-1.44740-	2	5.55390-	3 102 4 2 436
-1.46420-	3	3.38990-	4-7.03960-	5	1.11280-	5		102 4 2	437
0.0	+ 0	7.00000+	6	0	0	10	0	102 4 2	438
1.36300-	1	1.94600-	1-7.56520-	2	4.14970-	2-1.63420-	2	6.68430-	3 102 4 2 439
-1.86290-	3	4.49800-	4-9.79030-	5	1.61670-	5		102 4 2	440
0.0	+ 0	8.00000+	6	0	0	10	0	102 4 2	441
1.59430-	1	1.96250-	1-7.46390-	2	4.44860-	2-1.80210-	2	7.76290-	3 102 4 2 442
-2.25990-	3	5.64200-	4-1.27470-	4	2.17770-	5		102 4 2	443
0.0	+ 0	9.00000+	6	0	0	10	0	102 4 2	444
1.86040-	1	1.96140-	1-7.19100-	2	4.65540-	2-1.92400-	2	8.69180-	3 102 4 2 445
-2.61870-	3	6.72120-	4-1.56510-	4	2.74780-	5		102 4 2	446
0.0	+ 0	1.00000+	7	0	0	10	0	102 4 2	447
2.09440-	1	1.95690-	1-6.81520-	2	4.78600-	2-2.00350-	2	9.43480-	3 102 4 2 448
-2.92290-	3	7.67930-	4-1.83340-	4	3.29190-	5		102 4 2	449
0.0	+ 0	1.10000+	7	0	0	10	0	102 4 2	450
2.27300-	1	1.97420-	1-6.45610-	2	4.91070-	2-2.06990-	2	1.01000-	2 102 4 2 451
-3.20200-	3	8.58410-	4-2.09290-	4	3.82880-	5		102 4 2	452
0.0	+ 0	1.20000+	7	0	0	10	0	102 4 2	453
2.43720-	1	2.00670-	1-6.11200-	2	5.04570-	2-2.13150-	2	1.07500-	2 102 4 2 454
-3.47350-	3	9.47980-	4-2.35280-	4	4.37330-	5		102 4 2	455
0.0	+ 0	1.30000+	7	0	0	10	0	102 4 2	456
2.60420-	1	2.03800-	1-5.73820-	2	5.16260-	2-2.17730-	2	1.13400-	2 102 4 2 457
-3.72110-	3	1.03200-	3-2.60070-	4	4.90100-	5		102 4 2	458
0.0	+ 0	1.40000+	7	0	0	10	0	102 4 2	459
2.76720-	1	2.06690-	1-5.33960-	2	5.25890-	2-2.20680-	2	1.18580-	2 102 4 2 460
-3.94010-	3	1.10910-	3-2.83160-	4	5.40050-	5		102 4 2	461
0.0	+ 0	1.41000+	7	0	0	10	0	102 4 2	462
2.78300-	1	2.06960-	1-5.29890-	2	5.26760-	2-2.20890-	2	1.19060-	2 102 4 2 463
-3.96050-	3	1.11640-	3-2.85370-	4	5.44880-	5		102 4 2	464
0.0	+ 0	1.50000+	7	0	0	10	0	102 4 2	465
2.92160-	1	2.09410-	1-4.92740-	2	5.33950-	2-2.22250-	2	1.23120-	2 102 4 2 466
-4.13220-	3	1.17930-	3-3.04500-	4	5.86950-	5		102 4 2	467
0.0	+ 0	1.60000+	7	0	0	10	0	102 4 2	468
3.06600-	1	2.12040-	1-4.50960-	2	5.40860-	2-2.22690-	2	1.27110-	2 102 4 2 469
-4.29990-	3	1.24320-	3-3.24150-	4	6.30810-	5		102 4 2	470
0.0	+ 0	1.70000+	7	0	0	10	0	102 4 2	471
3.19970-	1	2.14650-	1-4.09230-	2	5.46990-	2-2.22230-	2	1.30630-	2 102 4 2 472
-4.44620-	3	1.30150-	3-3.42220-	4	6.71780-	5		102 4 2	473
0.0	+ 0	1.80000+	7	0	0	10	0	102 4 2	474
3.32290-	1	2.17290-	1-3.67980-	2	5.52640-	2-2.21060-	2	1.33770-	2 102 4 2 475
-4.57370-	3	1.35500-	3-3.58860-	4	7.10090-	5		102 4 2	476
0.0	+ 0	1.90000+	7	0	0	10	0	102 4 2	477
3.43590-	1	2.19990-	1-3.27530-	2	5.58090-	2-2.19340-	2	1.36600-	2 102 4 2 478
-4.68550-	3	1.40430-	3-3.74240-	4	7.46030-	5		102 4 2	479
0.0	+ 0	2.00000+	7	0	0	10	0	102 4 2	480
3.53950-	1	2.22800-	1-2.88080-	2	5.63550-	2-2.17220-	2	1.39210-	2 102 4 2 481
-4.78390-	3	1.45020-	3-3.88520-	4	7.79930-	5		102 4 2	482
								102 4 0	483
1.00200+	3	1.99700+	0	0	2	0	0	102 4 16	484
0.0	+ 0	1.99700+	0	0	1	0	0	102 4 16	485
0.0	+ 0	0.0	+ 0	0	0	1	18	102 4 16	486
	18		2	0	0	0	0	102 4 16	487
0.0	+ 0	4.00000+	6	0	0	1	19	102 4 16	488
	19		2	0	0	0	0	102 4 16	489

	10	20	30	40	50	60	MAT	MF	MT	SEQ
-1.00000+	0 0.0	+ 0-9.84810-	1 0.0	+ 0-9.39690-	1 0.0	+ 0 102 4 16				490
-8.66030-	1 0.0	+ 0-7.66040-	1 0.0	+ 0-6.42790-	1 0.0	+ 0 102 4 16				491
-5.00000-	1 0.0	+ 0-3.42020-	1 0.0	+ 0-1.73650-	1 0.0	+ 0 102 4 16				492
-2.32050-	8 0.0	+ 0 1.73650-	1 0.0	+ 0 3.42020-	1 0.0	+ 0 102 4 16				493
5.00000-	1 0.0	+ 0 6.42790-	1 4.35308-	1 7.66040-	1 8.93960-	1 102 4 16				494
8.66030-	1 2.03308+	0 9.39690-	1 5.00545+	0 9.84810-	1 9.32415+	0 102 4 16				495
1.00000+	0 1.15007+	1				102 4 16				496
0.0	+ 0 5.00000+	6				19 102 4 16				497
	19	2	0	0	0	0 102 4 16				498
-1.00000+	0 2.79895-	3-9.84810-	1 2.83962-	3-9.39690-	1 2.92473-	3 102 4 16				499
-8.66030-	1 2.99077-	3-7.66040-	1 3.49736-	3-6.42790-	1 5.17526-	3 102 4 16				500
-5.00000-	1 9.54202-	3-3.42020-	1 1.77812-	2-1.73650-	1 2.70474-	2 102 4 16				501
-2.32050-	8 7.08883-	2 1.73650-	1 1.68206-	1 3.42020-	1 2.36914-	1 102 4 16				502
5.00000-	1 2.97973-	1 6.42790-	1 4.56419-	1 7.66040-	1 9.17854-	1 102 4 16				503
8.66030-	1 2.08157+	0 9.39690-	1 4.24612+	0 9.84810-	1 6.86100+	0 102 4 16				504
1.00000+	0 8.15160+	0				102 4 16				505
0.0	+ 0 6.00000+	6	0	0	1	19 102 4 16				506
	19	2	0	0	0	0 102 4 16				507
-1.00000+	0 1.86272-	2-9.84810-	1 1.85360-	2-9.39690-	1 1.82587-	2 102 4 16				508
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5.00000-	1 3.20281-	1 6.42790-	1 5.06611-	1 7.66040-	1 9.92700-	1 102 4 16				512
8.66030-	1 2.03525+	0 9.39690-	1 3.74784+	0 9.84810-	1 5.76136+	0 102 4 16				513
1.00000+	0 6.73428+	0				102 4 16				514
0.0	+ 0 7.00000+	6	0	0	1	19 102 4 16				515
	19	2	0	0	0	0 102 4 16				516
-1.00000+	0 3.78186-	2-9.84810-	1 3.94485-	2-9.39690-	1 4.05060-	2 102 4 16				517
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-2.32050-	8 1.63732-	1 1.73650-	1 1.87816-	1 3.42020-	1 2.42406-	1 102 4 16				520
5.00000-	1 3.30842-	1 6.42790-	1 5.71564-	1 7.66040-	1 1.05330+	0 102 4 16				521
8.66030-	1 1.99792+	0 9.39690-	1 3.45012+	0 9.84810-	1 5.07297+	0 102 4 16				522
1.00000+	0 5.94144+	0				102 4 16				523
0.0	+ 0 8.00000+	6	0	0	1	19 102 4 16				524
	19	2	0	0	0	0 102 4 16				525
-1.00000+	0 6.89855-	2-9.84810-	1 6.84381-	2-9.39690-	1 6.68422-	2 102 4 16				526
-8.66030-	1 6.44429-	2-7.66040-	1 6.16058-	2-6.42790-	1 8.69825-	2 102 4 16				527
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5.00000-	1 3.77518-	1 6.42790-	1 6.27264-	1 7.66040-	1 1.09818+	0 102 4 16				530
8.66030-	1 1.95612+	0 9.39690-	1 3.22486+	0 9.84810-	1 4.66614+	0 102 4 16				531
1.00000+	0 5.39542+	0				102 4 16				532
0.0	+ 0 9.00000+	6	0	0	1	19 102 4 16				533
	19	2	0	0	0	0 102 4 16				534
-1.00000+	0 6.27175-	2-9.84810-	1 6.23197-	2-9.39690-	1 6.11431-	2 102 4 16				535
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-2.32050-	8 1.78533-	1 1.73650-	1 2.17453-	1 3.42020-	1 2.82717-	1 102 4 16				538
5.00000-	1 4.09781-	1 6.42790-	1 6.68916-	1 7.66040-	1 1.13031+	0 102 4 16				539
8.66030-	1 1.90883+	0 9.39690-	1 3.01193+	0 9.84810-	1 4.25832+	0 102 4 16				540
1.00000+	0 4.88661+	0				102 4 16				541
0.0	+ 0 1.00000+	7	0	0	1	19 102 4 16				542
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-5.00000-	1	1.24323-	1-3.42020-	1	1.47254-	1-1.73650-	1	1.68321-	1	102 4 16 546
-2.32050-	8	1.90257-	1 1.73650-	1	2.20232-	1 3.42020-	1	2.97250-	1	102 4 16 547
5.00000-	1	4.38347-	1 6.42790-	1	7.00128-	1 7.66040-	1	1.15864+	0	102 4 16 548
8.66030-	1	1.86910+	0 9.39690-	1	2.84341+	0 9.84810-	1	3.94945+	0	102 4 16 549
1.00000+	0	4.52038+	0							102 4 16 550
0.0	+	0 1.10000+	7	0	0	1		19	102 4 16 551	
	19		2	0	0	0		0	102 4 16 552	
-1.00000+	0	6.78437-	2-9.84810-	1	6.75418-	2-9.39690-	1	6.66645-	2	102 4 16 553
-8.66030-	1	1.10119-	1-7.66040-	1	1.05459-	1-6.42790-	1	1.19782-	1	102 4 16 554
-5.00000-	1	1.44764-	1-3.42020-	1	1.44266-	1-1.73650-	1	1.63356-	1	102 4 16 555
-2.32050-	8	1.77992-	1 1.73650-	1	2.29930-	1 3.42020-	1	3.11266-	1	102 4 16 556
5.00000-	1	4.55171-	1 6.42790-	1	7.32525-	1 7.66040-	1	1.18033+	0	102 4 16 557
8.66030-	1	1.83678+	0 9.39690-	1	2.71355+	0 9.84810-	1	3.69643+	0	102 4 16 558
1.00000+	0	4.24180+	0							102 4 16 559
0.0	+	0 1.20000+	7	0	0	1		19	102 4 16 560	
	19		2	0	0	0		0	102 4 16 561	
-1.00000+	0	1.03472-	1-9.84810-	1	1.02921-	1-9.39690-	1	1.01230-	1	102 4 16 562
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-2.32050-	8	1.86189-	1 1.73650-	1	2.36292-	1 3.42020-	1	3.19461-	1	102 4 16 565
5.00000-	1	4.81493-	1 6.42790-	1	7.53908-	1 7.66040-	1	1.18692+	0	102 4 16 566
8.66030-	1	1.80919+	0 9.39690-	1	2.58680+	0 9.84810-	1	3.46666+	0	102 4 16 567
1.00000+	0	3.93388+	0							102 4 16 568
0.0	+	0 1.30000+	7	0	0	1		19	102 4 16 569	
	19		2	0	0	0		0	102 4 16 570	
-1.00000+	0	9.50203-	2-9.84810-	1	9.46240-	2-9.39690-	1	1.09347-	1	102 4 16 571
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5.00000-	1	4.97190-	1 6.42790-	1	7.71583-	1 7.66040-	1	1.20401+	0	102 4 16 575
8.66030-	1	1.77923+	0 9.39690-	1	2.46329+	0 9.84810-	1	3.26587+	0	102 4 16 576
1.00000+	0	3.72059+	0							102 4 16 577
0.0	+	0 1.40000+	7	0	0	1		19	102 4 16 578	
	19		2	0	0	0		0	102 4 16 579	
-1.00000+	0	1.06445-	1-9.84810-	1	1.05943-	1-9.39690-	1	1.04478-	1	102 4 16 580
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-5.00000-	1	1.48106-	1-3.42020-	1	1.59401-	1-1.73650-	1	1.71018-	1	102 4 16 582
-2.32050-	8	1.97441-	1 1.73650-	1	2.51742-	1 3.42020-	1	3.55418-	1	102 4 16 583
5.00000-	1	5.23747-	1 6.42790-	1	7.94799-	1 7.66040-	1	1.21984+	0	102 4 16 584
8.66030-	1	1.75552+	0 9.39690-	1	2.36484+	0 9.84810-	1	3.10777+	0	102 4 16 585
1.00000+	0	3.50151+	0							102 4 16 586
0.0	+	0 1.41000+	7	0	0	1		19	102 4 16 587	
	19		2	0	0	0		0	102 4 16 588	
-1.00000+	0	1.05738-	1-9.84810-	1	1.05246-	1-9.39690-	1	1.03831-	1	102 4 16 589
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-5.00000-	1	1.52325-	1-3.42020-	1	1.59250-	1-1.73650-	1	1.69928-	1	102 4 16 591
-2.32050-	8	1.98701-	1 1.73650-	1	2.50446-	1 3.42020-	1	3.54006-	1	102 4 16 592
5.00000-	1	5.22609-	1 6.42790-	1	7.98556-	1 7.66040-	1	1.21765+	0	102 4 16 593
8.66030-	1	1.75016+	0 9.39690-	1	2.37449+	0 9.84810-	1	3.09366+	0	102 4 16 594
1.00000+	0	3.51347+	0							102 4 16 595
0.0	+	0 1.50000+	7	0	0	1		19	102 4 16 596	
	19		2	0	0	0		0	102 4 16 597	
-1.00000+	0	9.99439-	2-9.84810-	1	9.95636-	2-9.39690-	1	1.27472-	1	102 4 16 598
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-2.32050-	8	2.03654-	1 1.73650-	1	2.57783-	1 3.42020-	1	3.61988-	1	102 4 16	601
5.00000-	1	5.34148-	1 6.42790-	1	8.19483-	1 7.66040-	1	1.22997+	0	102 4 16	602
8.66030-	1	1.72722+	0 9.39690-	1	2.28687+	0 9.84810-	1	2.93150+	0	102 4 16	603
1.00000+	0	3.31658+	0							102 4 16	604
0.0	+	1.60000+	7	0	0	1	19	102 4 16			605
	19	2	0	0	0	0	0	102 4 16			606
-1.00000+	0	1.22784-	1-9.84810-	1	1.22283-	1-9.39690-	1	1.20831-	1	102 4 16	607
-8.66030-	1	1.29883-	1-7.66040-	1	1.46043-	1-6.42790-	1	1.48105-	1	102 4 16	608
-5.00000-	1	1.55515-	1-3.42020-	1	1.65207-	1-1.73650-	1	1.81647-	1	102 4 16	609
-2.32050-	8	2.09032-	1 1.73650-	1	2.63350-	1 3.42020-	1	3.71305-	1	102 4 16	610
5.00000-	1	5.54234-	1 6.42790-	1	8.26055-	1 7.66040-	1	1.23925+	0	102 4 16	611
8.66030-	1	1.69903+	0 9.39690-	1	2.19635+	0 9.84810-	1	2.79690+	0	102 4 16	612
1.00000+	0	3.12562+	0							102 4 16	613
0.0	+	1.70000+	7	0	0	1	19	102 4 16			614
	19	2	0	0	0	0	0	102 4 16			615
-1.00000+	0	1.17904-	1-9.84810-	1	1.25781-	1-9.39690-	1	1.27599-	1	102 4 16	616
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5.00000-	1	5.65194-	1 6.42790-	1	8.50243-	1 7.66040-	1	1.25600+	0	102 4 16	620
8.66030-	1	1.70320+	0 9.39690-	1	2.11915+	0 9.84810-	1	2.67125+	0	102 4 16	621
1.00000+	0	2.99899+	0							102 4 16	622
0.0	+	1.80000+	7	0	0	1	19	102 4 16			623
	19	2	0	0	0	0	0	102 4 16			624
-1.00000+	0	1.23972-	1-9.84810-	1	1.23542-	1-9.39690-	1	1.22224-	1	102 4 16	625
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-2.32050-	8	2.07499-	1 1.73650-	1	2.74348-	1 3.42020-	1	3.95614-	1	102 4 16	628
5.00000-	1	5.80064-	1 6.42790-	1	8.62791-	1 7.66040-	1	1.26049+	0	102 4 16	629
8.66030-	1	1.67673+	0 9.39690-	1	2.06081+	0 9.84810-	1	2.55783+	0	102 4 16	630
1.00000+	0	2.83446+	0							102 4 16	631
0.0	+	1.90000+	7	0	0	1	19	102 4 16			632
	19	2	0	0	0	0	0	102 4 16			633
-1.00000+	0	1.34770-	1-9.84810-	1	1.39579-	1-9.39690-	1	1.38494-	1	102 4 16	634
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-2.32050-	8	2.12176-	1 1.73650-	1	2.78889-	1 3.42020-	1	3.99410-	1	102 4 16	637
5.00000-	1	5.85200-	1 6.42790-	1	8.77750-	1 7.66040-	1	1.26774+	0	102 4 16	638
8.66030-	1	1.65228+	0 9.39690-	1	1.99889+	0 9.84810-	1	2.44079+	0	102 4 16	639
1.00000+	0	2.71869+	0							102 4 16	640
0.0	+	2.00000+	7	0	0	1	19	102 4 16			641
	19	2	0	0	0	0	0	102 4 16			642
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5.00000-	1	6.00694-	1 6.42790-	1	8.83729-	1 7.66040-	1	1.27759+	0	102 4 16	647
8.66030-	1	1.65021+	0 9.39690-	1	1.93317+	0 9.84810-	1	2.36388+	0	102 4 16	648
1.00000+	0	2.59861+	0							102 4 16	649
										102 0 0	650
										102 0 0	651
1.00200+	3	1.99700+	0	0	0	1	0	102 5 16			652
0.0	+	0.0	+	0	0	1	1	2 102 5 16			653
	2	2	0	0	0	0	0	102 5 16			654

10		20		30		40		50		60		MAT	MF	MT	SEQ
4.00000+	6	1.00000+	0	2.00000+	7	1.00000+	0					102	5	16	655
0.0	+ 0	0.0	+ 0			0	0		1		18	102	5	16	656
	18		2			0	0		0		0	102	5	16	657
0.0	+ 0	4.00000+	6			0	0		1		16	102	5	16	658
	16		2			0	0		0		0	102	5	16	659
0.0	+ 0	0.0	+ 0	1.00000+	5	5.66280-	7	2.00000+	5	6.18020-	7	102	5	16	660
3.00000+	5	6.79160-	7	4.00000+	5	7.19550-	7	5.00000+	5	8.91290-	7	102	5	16	661
6.00000+	5	1.05330-	6	7.00000+	5	1.16230-	6	8.00000+	5	1.18680-	6	102	5	16	662
9.00000+	5	9.53470-	7	1.00000+	6	8.14090-	7	1.10000+	6	6.46170-	7	102	5	16	663
1.20000+	6	4.21850-	7	1.30000+	6	2.59660-	7	1.40000+	6	2.80460-	8	102	5	16	664
1.50000+	6	0.0	+ 0									102	5	16	665
0.0	+ 0	5.00000+	6			0	0		1		27	102	5	16	666
	27		2			0	0		0		0	102	5	16	667
0.0	+ 0	0.0	+ 0	1.00000+	5	5.71140-	7	2.00000+	5	4.66860-	7	102	5	16	668
3.00000+	5	4.39520-	7	4.00000+	5	4.26690-	7	5.00000+	5	4.03900-	7	102	5	16	669
6.00000+	5	4.15410-	7	7.00000+	5	4.51780-	7	8.00000+	5	5.12750-	7	102	5	16	670
9.00000+	5	5.53270-	7	1.00000+	6	5.58380-	7	1.10000+	6	5.92150-	7	102	5	16	671
1.20000+	6	6.06820-	7	1.30000+	6	5.87960-	7	1.40000+	6	5.60860-	7	102	5	16	672
1.50000+	6	5.31820-	7	1.60000+	6	4.89270-	7	1.70000+	6	4.32540-	7	102	5	16	673
1.80000+	6	3.18370-	7	1.90000+	6	2.76760-	7	2.00000+	6	2.26540-	7	102	5	16	674
2.10000+	6	1.79200-	7	2.20000+	6	1.23000-	7	2.30000+	6	9.03820-	8	102	5	16	675
2.40000+	6	5.96200-	8	2.50000+	6	7.29280-	9	2.60000+	6	0.0	+ 0	102	5	16	676
0.0	+ 0	6.00000+	6			0	0		1		38	102	5	16	677
	38		2			0	0		0		0	102	5	16	678
0.0	+ 0	0.0	+ 0	1.00000+	5	5.52110-	7	2.00000+	5	4.99160-	7	102	5	16	679
3.00000+	5	4.23860-	7	4.00000+	5	3.65670-	7	5.00000+	5	3.22860-	7	102	5	16	680
6.00000+	5	3.09710-	7	7.00000+	5	3.06730-	7	8.00000+	5	3.15530-	7	102	5	16	681
9.00000+	5	3.17420-	7	1.00000+	6	3.46130-	7	1.10000+	6	3.64150-	7	102	5	16	682
1.20000+	6	3.82420-	7	1.30000+	6	3.98240-	7	1.40000+	6	4.17120-	7	102	5	16	683
1.50000+	6	4.28740-	7	1.60000+	6	4.27840-	7	1.70000+	6	3.98840-	7	102	5	16	684
1.80000+	6	3.92420-	7	1.90000+	6	3.79810-	7	2.00000+	6	3.55040-	7	102	5	16	685
2.10000+	6	3.32240-	7	2.20000+	6	3.04890-	7	2.30000+	6	2.82920-	7	102	5	16	686
2.40000+	6	2.59620-	7	2.50000+	6	2.29900-	7	2.60000+	6	1.70710-	7	102	5	16	687
2.70000+	6	1.54140-	7	2.80000+	6	1.37160-	7	2.90000+	6	1.18370-	7	102	5	16	688
3.00000+	6	9.51050-	8	3.10000+	6	6.81270-	8	3.20000+	6	5.80890-	8	102	5	16	689
3.30000+	6	4.41340-	8	3.40000+	6	3.27180-	8	3.50000+	6	8.07910-	9	102	5	16	690
3.60000+	6	0.0	+ 0	3.70000+	6	0.0	+ 0					102	5	16	691
0.0	+ 0	7.00000+	6			0	0		1		25	102	5	16	692
	25		2			0	0		0		0	102	5	16	693
0.0	+ 0	0.0	+ 0	2.00000+	5	4.56100-	7	4.00000+	5	3.58090-	7	102	5	16	694
6.00000+	5	2.86210-	7	8.00000+	5	2.74670-	7	1.00000+	6	2.57320-	7	102	5	16	695
1.20000+	6	2.67800-	7	1.40000+	6	2.82450-	7	1.60000+	6	3.06970-	7	102	5	16	696
1.80000+	6	3.15830-	7	2.00000+	6	3.19880-	7	2.20000+	6	3.09000-	7	102	5	16	697
2.40000+	6	2.72130-	7	2.60000+	6	2.49740-	7	2.80000+	6	2.15890-	7	102	5	16	698
3.00000+	6	1.85240-	7	3.20000+	6	1.60210-	7	3.40000+	6	1.31620-	7	102	5	16	699
3.60000+	6	9.03870-	8	3.80000+	6	7.25200-	8	4.00000+	6	5.28340-	8	102	5	16	700
4.20000+	6	3.38980-	8	4.40000+	6	2.12610-	8	4.60000+	6	0.0	+ 0	102	5	16	701
4.80000+	6	0.0	+ 0									102	5	16	702
0.0	+ 0	8.00000+	6			0	0		1		30	102	5	16	703
	30		2			0	0		0		0	102	5	16	704
0.0	+ 0	0.0	+ 0	2.00000+	5	4.42620-	7	4.00000+	5	3.62090-	7	102	5	16	705
6.00000+	5	2.73950-	7	8.00000+	5	2.36420-	7	1.00000+	6	2.21400-	7	102	5	16	706
1.20000+	6	2.08790-	7	1.40000+	6	2.21380-	7	1.60000+	6	2.35510-	7	102	5	16	707
1.80000+	6	2.40650-	7	2.00000+	6	2.55730-	7	2.20000+	6	2.55930-	7	102	5	16	708
2.40000+	6	2.56070-	7	2.60000+	6	2.53170-	7	2.80000+	6	2.38060-	7	102	5	16	709

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
3.00000+ 6	2.06680- 7	3.20000+ 6	1.90670- 7	3.40000+ 6	1.72100- 7	102	5	16	710	
3.60000+ 6	1.49930- 7	3.80000+ 6	1.29700- 7	4.00000+ 6	1.14370- 7	102	5	16	711	
4.20000+ 6	9.61440- 8	4.40000+ 6	6.77840- 8	4.60000+ 6	5.78180- 8	102	5	16	712	
4.80000+ 6	4.31610- 8	5.00000+ 6	2.94980- 8	5.20000+ 6	2.39050- 8	102	5	16	713	
5.40000+ 6	1.64700- 8	5.60000+ 6	0.0 + 0	5.80000+ 6	0.0 + 0	102	5	16	714	
0.0 + 0	9.00000+ 6	0	0	0	1	46	102	5	16	715
	46	2	0	0	0	0	102	5	16	716
0.0 + 0	0.0 + 0	1.50000+ 5	3.68620- 7	3.00000+ 5	3.91310- 7	102	5	16	717	
4.50000+ 5	3.29950- 7	6.00000+ 5	2.58520- 7	7.50000+ 5	2.29650- 7	102	5	16	718	
9.00000+ 5	1.94840- 7	1.05000+ 6	1.87070- 7	1.20000+ 6	1.85890- 7	102	5	16	719	
1.35000+ 6	1.82260- 7	1.50000+ 6	1.91240- 7	1.65000+ 6	1.93240- 7	102	5	16	720	
1.80000+ 6	1.97720- 7	1.95000+ 6	2.07900- 7	2.10000+ 6	2.11140- 7	102	5	16	721	
2.25000+ 6	2.07210- 7	2.40000+ 6	2.13170- 7	2.55000+ 6	2.17600- 7	102	5	16	722	
2.70000+ 6	2.11760- 7	2.85000+ 6	2.08550- 7	3.00000+ 6	2.06390- 7	102	5	16	723	
3.15000+ 6	2.02060- 7	3.30000+ 6	1.95500- 7	3.45000+ 6	1.83360- 7	102	5	16	724	
3.60000+ 6	1.60930- 7	3.75000+ 6	1.52540- 7	3.90000+ 6	1.43910- 7	102	5	16	725	
4.05000+ 6	1.34990- 7	4.20000+ 6	1.20840- 7	4.35000+ 6	1.08220- 7	102	5	16	726	
4.50000+ 6	1.00810- 7	4.65000+ 6	9.34730- 8	4.80000+ 6	8.61220- 8	102	5	16	727	
4.95000+ 6	7.57930- 8	5.10000+ 6	5.59290- 8	5.25000+ 6	5.12980- 8	102	5	16	728	
5.40000+ 6	4.67180- 8	5.55000+ 6	4.19670- 8	5.70000+ 6	3.32560- 8	102	5	16	729	
5.85000+ 6	2.41090- 8	6.00000+ 6	2.19210- 8	6.15000+ 6	1.94660- 8	102	5	16	730	
6.30000+ 6	1.44540- 8	6.45000+ 6	4.96620- 9	6.60000+ 6	0.0 + 0	102	5	16	731	
6.75000+ 6	0.0 + 0						102	5	16	732
0.0 + 0	1.00000+ 7	0	0	1	40	102	5	16	733	
	40	2	0	0	0	0	102	5	16	734
0.0 + 0	0.0 + 0	2.00000+ 5	3.45150- 7	4.00000+ 5	3.41170- 7	102	5	16	735	
6.00000+ 5	2.61320- 7	8.00000+ 5	2.17120- 7	1.00000+ 6	1.92320- 7	102	5	16	736	
1.20000+ 6	1.68760- 7	1.40000+ 6	1.66310- 7	1.60000+ 6	1.70460- 7	102	5	16	737	
1.80000+ 6	1.70780- 7	2.00000+ 6	1.72750- 7	2.20000+ 6	1.77360- 7	102	5	16	738	
2.40000+ 6	1.85340- 7	2.60000+ 6	1.87910- 7	2.80000+ 6	1.82590- 7	102	5	16	739	
3.00000+ 6	1.85550- 7	3.20000+ 6	1.78900- 7	3.40000+ 6	1.73780- 7	102	5	16	740	
3.60000+ 6	1.69310- 7	3.80000+ 6	1.62830- 7	4.00000+ 6	1.50720- 7	102	5	16	741	
4.20000+ 6	1.30370- 7	4.40000+ 6	1.22120- 7	4.60000+ 6	1.13830- 7	102	5	16	742	
4.80000+ 6	1.04620- 7	5.00000+ 6	9.25460- 8	5.20000+ 6	8.14230- 8	102	5	16	743	
5.40000+ 6	7.46010- 8	5.60000+ 6	6.77960- 8	5.80000+ 6	5.85050- 8	102	5	16	744	
6.00000+ 6	4.24470- 8	6.20000+ 6	3.82840- 8	6.40000+ 6	3.42030- 8	102	5	16	745	
6.60000+ 6	2.63450- 8	6.80000+ 6	1.88170- 8	7.00000+ 6	1.70690- 8	102	5	16	746	
7.20000+ 6	1.22270- 8	7.40000+ 6	4.37570- 9	7.60000+ 6	0.0 + 0	102	5	16	747	
7.80000+ 6	0.0 + 0						102	5	16	748
0.0 + 0	1.10000+ 7	0	0	1	45	102	5	16	749	
	45	2	0	0	0	0	102	5	16	750
0.0 + 0	0.0 + 0	2.00000+ 5	3.15440- 7	4.00000+ 5	3.10290- 7	102	5	16	751	
6.00000+ 5	2.69530- 7	8.00000+ 5	2.12970- 7	1.00000+ 6	1.82780- 7	102	5	16	752	
1.20000+ 6	1.64620- 7	1.40000+ 6	1.46670- 7	1.60000+ 6	1.45790- 7	102	5	16	753	
1.80000+ 6	1.47780- 7	2.00000+ 6	1.47360- 7	2.20000+ 6	1.48630- 7	102	5	16	754	
2.40000+ 6	1.51470- 7	2.60000+ 6	1.57870- 7	2.80000+ 6	1.63370- 7	102	5	16	755	
3.00000+ 6	1.63570- 7	3.20000+ 6	1.57550- 7	3.40000+ 6	1.59030- 7	102	5	16	756	
3.60000+ 6	1.58240- 7	3.80000+ 6	1.50890- 7	4.00000+ 6	1.44920- 7	102	5	16	757	
4.20000+ 6	1.40150- 7	4.40000+ 6	1.34410- 7	4.60000+ 6	1.24320- 7	102	5	16	758	
4.80000+ 6	1.07760- 7	5.00000+ 6	1.01610- 7	5.20000+ 6	9.54710- 8	102	5	16	759	
5.40000+ 6	8.93700- 8	5.60000+ 6	7.89730- 8	5.80000+ 6	6.98280- 8	102	5	16	760	
6.00000+ 6	6.48430- 8	6.20000+ 6	5.98960- 8	6.40000+ 6	5.49240- 8	102	5	16	761	
6.60000+ 6	4.77940- 8	6.80000+ 6	3.49140- 8	7.00000+ 6	3.19170- 8	102	5	16	762	
7.20000+ 6	2.90460- 8	7.40000+ 6	2.24750- 8	7.60000+ 6	1.61190- 8	102	5	16	763	
7.80000+ 6	1.48720- 8	8.00000+ 6	1.38830- 8	8.20000+ 6	1.01860- 8	102	5	16	764	

10		20		30		40		50		60		MAT	MF	MT	SEQ		
8.40000+	6	3.87860-	9	8.60000+	6	0.0	+	0	8.80000+	6	0.0	+	0	102	5	16	765
0.0	+	0	1.20000+	7		0		0		1			50	102	5	16	766
		50		2		0		0		0			0	102	5	16	767
0.0	+	0	0.0	+	0	2.00000+	5	3.00270-	7	4.00000+	5	2.95010-	7	102	5	16	768
6.00000+	5	2.67510-	7	8.00000+	5	2.12740-	7	1.00000+	6	1.85690-	7	102	5	16	769		
1.20000+	6	1.60510-	7	1.40000+	6	1.46560-	7	1.60000+	6	1.32010-	7	102	5	16	770		
1.80000+	6	1.31080-	7	2.00000+	6	1.32360-	7	2.20000+	6	1.31360-	7	102	5	16	771		
2.40000+	6	1.37380-	7	2.60000+	6	1.37180-	7	2.80000+	6	1.38620-	7	102	5	16	772		
3.00000+	6	1.43060-	7	3.20000+	6	1.46910-	7	3.40000+	6	1.45850-	7	102	5	16	773		
3.60000+	6	1.39660-	7	3.80000+	6	1.40340-	7	4.00000+	6	1.40220-	7	102	5	16	774		
4.20000+	6	1.33080-	7	4.40000+	6	1.27890-	7	4.60000+	6	1.24240-	7	102	5	16	775		
4.80000+	6	1.19810-	7	5.00000+	6	1.14940-	7	5.20000+	6	1.06470-	7	102	5	16	776		
5.40000+	6	9.25020-	8	5.60000+	6	8.77920-	8	5.80000+	6	8.31160-	8	102	5	16	777		
6.00000+	6	7.84970-	8	6.20000+	6	7.28120-	8	6.40000+	6	6.55290-	8	102	5	16	778		
6.60000+	6	5.81820-	8	6.80000+	6	5.44560-	8	7.00000+	6	5.07380-	8	102	5	16	779		
7.20000+	6	4.69480-	8	7.40000+	6	4.12090-	8	7.60000+	6	3.02310-	8	102	5	16	780		
7.80000+	6	2.79940-	8	8.00000+	6	2.58510-	8	8.20000+	6	2.36580-	8	102	5	16	781		
8.40000+	6	1.85610-	8	8.60000+	6	1.34700-	8	8.80000+	6	1.27450-	8	102	5	16	782		
9.00000+	6	1.20550-	8	9.20000+	6	9.20470-	9	9.40000+	6	3.71270-	9	102	5	16	783		
9.60000+	6	0.0	+	0	9.80000+	6	0.0	+	0					102	5	16	784
0.0	+	0	1.30000+	7		0		0		1			55	102	5	16	785
		55		2		0		0		0			0	102	5	16	786
0.0	+	0	0.0	+	0	2.00000+	5	2.84260-	7	4.00000+	5	2.79740-	7	102	5	16	787
6.00000+	5	2.52370-	7	8.00000+	5	2.20590-	7	1.00000+	6	1.79010-	7	102	5	16	788		
1.20000+	6	1.44190-	7	1.40000+	6	1.35010-	7	1.60000+	6	1.30500-	7	102	5	16	789		
1.80000+	6	1.18650-	7	2.00000+	6	1.17680-	7	2.20000+	6	1.21580-	7	102	5	16	790		
2.40000+	6	1.22620-	7	2.60000+	6	1.21380-	7	2.80000+	6	1.25990-	7	102	5	16	791		
3.00000+	6	1.24740-	7	3.20000+	6	1.25170-	7	3.40000+	6	1.28200-	7	102	5	16	792		
3.60000+	6	1.30860-	7	3.80000+	6	1.29140-	7	4.00000+	6	1.23100-	7	102	5	16	793		
4.20000+	6	1.23320-	7	4.40000+	6	1.22940-	7	4.60000+	6	1.20800-	7	102	5	16	794		
4.80000+	6	1.14650-	7	5.00000+	6	1.09540-	7	5.20000+	6	1.06130-	7	102	5	16	795		
5.40000+	6	1.02340-	7	5.60000+	6	9.83770-	8	5.80000+	6	9.13510-	8	102	5	16	796		
6.00000+	6	7.95340-	8	6.20000+	6	7.59470-	8	6.40000+	6	7.23940-	8	102	5	16	797		
6.60000+	6	6.88820-	8	6.80000+	6	6.53370-	8	7.00000+	6	5.83280-	8	102	5	16	798		
7.20000+	6	5.18600-	8	7.40000+	6	4.90720-	8	7.60000+	6	4.62750-	8	102	5	16	799		
7.80000+	6	4.34640-	8	8.00000+	6	4.05480-	8	8.20000+	6	3.58490-	8	102	5	16	800		
8.40000+	6	2.63420-	8	8.60000+	6	2.46700-	8	8.80000+	6	2.30590-	8	102	5	16	801		
9.00000+	6	2.15600-	8	9.20000+	6	1.67760-	8	9.40000+	6	1.21170-	8	102	5	16	802		
9.60000+	6	1.15450-	8	9.80000+	6	1.12360-	8	1.00000+	7	8.23160-	9	102	5	16	803		
1.02000+	7	3.18110-	9	1.04000+	7	3.58840-	9	1.06000+	7	0.0	+	0	102	5	16	804	
1.08000+	7	0.0	+	0										102	5	16	805
0.0	+	0	1.40000+	7		0		0		1			60	102	5	16	806
		60		2		0		0		0			0	102	5	16	807
0.0	+	0	0.0	+	0	2.00000+	5	2.74560-	7	4.00000+	5	2.71040-	7	102	5	16	808
6.00000+	5	2.44150-	7	8.00000+	5	2.17970-	7	1.00000+	6	1.85730-	7	102	5	16	809		
1.20000+	6	1.50860-	7	1.40000+	6	1.31590-	7	1.60000+	6	1.21640-	7	102	5	16	810		
1.80000+	6	1.19300-	7	2.00000+	6	1.09350-	7	2.20000+	6	1.08370-	7	102	5	16	811		
2.40000+	6	1.11500-	7	2.60000+	6	1.11920-	7	2.80000+	6	1.10450-	7	102	5	16	812		
3.00000+	6	1.13850-	7	3.20000+	6	1.12850-	7	3.40000+	6	1.12840-	7	102	5	16	813		
3.60000+	6	1.15210-	7	3.80000+	6	1.17310-	7	4.00000+	6	1.19160-	7	102	5	16	814		
4.20000+	6	1.17090-	7	4.40000+	6	1.11220-	7	4.60000+	6	1.11170-	7	102	5	16	815		
4.80000+	6	1.10650-	7	5.00000+	6	1.09770-	7	5.20000+	6	1.03490-	7	102	5	16	816		
5.40000+	6	9.89420-	8	5.60000+	6	9.62320-	8	5.80000+	6	9.31960-	8	102	5	16	817		
6.00000+	6	8.99980-	8	6.20000+	6	8.67600-	8	6.40000+	6	8.07880-	8	102	5	16	818		
6.60000+	6	7.04620-	8	6.80000+	6	6.76570-	8	7.00000+	6	6.48790-	8	102	5	16	819		

.....10.....	.....20.....	.....30.....	.....40.....	.....50.....	.....60.....	MAT	MF	MT	SEQ
7.20000+ 6	6.21290- 8	7.40000+ 6	5.93850- 8	7.60000+ 6	5.47460- 8	102	5	16	820
7.80000+ 6	5.06620- 8	8.00000+ 6	4.51270- 8	8.20000+ 6	4.29570- 8	102	5	16	821
8.40000+ 6	4.07680- 8	8.60000+ 6	3.85560- 8	8.80000+ 6	3.62070- 8	102	5	16	822
9.00000+ 6	3.21980- 8	9.20000+ 6	2.36500- 8	9.40000+ 6	2.23560- 8	102	5	16	823
9.60000+ 6	2.11000- 8	9.80000+ 6	1.99400- 8	1.00000+ 7	1.81130- 8	102	5	16	824
1.02000+ 7	1.46700- 8	1.04000+ 7	1.06420- 8	1.06000+ 7	1.03370- 8	102	5	16	825
1.08000+ 7	1.03500- 8	1.10000+ 7	7.58520- 9	1.12000+ 7	3.03280- 9	102	5	16	826
1.14000+ 7	3.55540- 9	1.16000+ 7	0.0 + 0	1.18000+ 7	0.0 + 0	102	5	16	827
0.0 + 0	1.41000+ 7	0	0	0	61	102	5	16	828
	61	2	0	0	0	102	5	16	829
0.0 + 0	0.0 + 0	2.00000+ 5	2.70930- 7	4.00000+ 5	2.67560- 7	102	5	16	830
6.00000+ 5	2.41000- 7	8.00000+ 5	2.15040- 7	1.00000+ 6	1.84530- 7	102	5	16	831
1.20000+ 6	1.48580- 7	1.40000+ 6	1.29460- 7	1.60000+ 6	1.20850- 7	102	5	16	832
1.80000+ 6	1.17010- 7	2.00000+ 6	1.10030- 7	2.20000+ 6	1.09490- 7	102	5	16	833
2.40000+ 6	1.09130- 7	2.60000+ 6	1.09540- 7	2.80000+ 6	1.08080- 7	102	5	16	834
3.00000+ 6	1.11310- 7	3.20000+ 6	1.14070- 7	3.40000+ 6	1.12930- 7	102	5	16	835
3.60000+ 6	1.12710- 7	3.80000+ 6	1.14760- 7	4.00000+ 6	1.16620- 7	102	5	16	836
4.20000+ 6	1.14700- 7	4.40000+ 6	1.09010- 7	4.60000+ 6	1.09020- 7	102	5	16	837
4.80000+ 6	1.08590- 7	5.00000+ 6	1.07790- 7	5.20000+ 6	1.01860- 7	102	5	16	838
5.40000+ 6	9.74810- 8	5.60000+ 6	9.49390- 8	5.80000+ 6	9.20490- 8	102	5	16	839
6.00000+ 6	8.89680- 8	6.20000+ 6	8.58360- 8	6.40000+ 6	8.00170- 8	102	5	16	840
6.60000+ 6	6.97880- 8	6.80000+ 6	6.70690- 8	7.00000+ 6	6.43760- 8	102	5	16	841
7.20000+ 6	6.17090- 8	7.40000+ 6	5.90600- 8	7.60000+ 6	5.62400- 8	102	5	16	842
7.80000+ 6	5.04850- 8	8.00000+ 6	4.9380- 8	8.20000+ 6	4.28490- 8	102	5	16	843
8.40000+ 6	4.07410- 8	8.60000+ 6	3.86110- 8	8.80000+ 6	3.64360- 8	102	5	16	844
9.00000+ 6	3.23340- 8	9.20000+ 6	2.36840- 8	9.40000+ 6	2.24270- 8	102	5	16	845
9.60000+ 6	2.11940- 8	9.80000+ 6	2.00260- 8	1.00000+ 7	1.89450- 8	102	5	16	846
1.02000+ 7	1.47200- 8	1.04000+ 7	1.06170- 8	1.06000+ 7	1.02460- 8	102	5	16	847
1.08000+ 7	1.01060- 8	1.10000+ 7	9.87250- 9	1.12000+ 7	7.63590- 9	102	5	16	848
1.14000+ 7	3.20450- 9	1.16000+ 7	3.00250- 9	1.18000+ 7	0.0 + 0	102	5	16	849
1.20000+ 7	0.0 + 0					102	5	16	850
0.0 + 0	1.50000+ 7	0	0	1	65	102	5	16	851
	65	2	0	0	0	102	5	16	852
0.0 + 0	0.0 + 0	2.00000+ 5	2.61340- 7	4.00000+ 5	2.59070- 7	102	5	16	853
6.00000+ 5	2.33450- 7	8.00000+ 5	2.07570- 7	1.00000+ 6	1.81960- 7	102	5	16	854
1.20000+ 6	1.50870- 7	1.40000+ 6	1.35050- 7	1.60000+ 6	1.17700- 7	102	5	16	855
1.80000+ 6	1.08060- 7	2.00000+ 6	1.02470- 7	2.20000+ 6	1.02350- 7	102	5	16	856
2.40000+ 6	1.01610- 7	2.60000+ 6	1.01150- 7	2.80000+ 6	1.01350- 7	102	5	16	857
3.00000+ 6	9.97870- 8	3.20000+ 6	1.02280- 7	3.40000+ 6	1.04980- 7	102	5	16	858
3.60000+ 6	1.03390- 7	3.80000+ 6	1.02900- 7	4.00000+ 6	1.04540- 7	102	5	16	859
4.20000+ 6	1.05970- 7	4.40000+ 6	1.07250- 7	4.60000+ 6	1.05050- 7	102	5	16	860
4.80000+ 6	9.94970- 8	5.00000+ 6	9.92930- 8	5.20000+ 6	9.87380- 8	102	5	16	861
5.40000+ 6	9.78980- 8	5.60000+ 6	9.51010- 8	5.80000+ 6	9.06630- 8	102	5	16	862
6.00000+ 6	8.63670- 8	6.20000+ 6	8.39490- 8	6.40000+ 6	8.13790- 8	102	5	16	863
6.60000+ 6	7.87630- 8	6.80000+ 6	7.61550- 8	7.00000+ 6	7.11050- 8	102	5	16	864
7.20000+ 6	6.21110- 8	7.40000+ 6	5.99230- 8	7.60000+ 6	5.77550- 8	102	5	16	865
7.80000+ 6	5.56040- 8	8.00000+ 6	5.34590- 8	8.20000+ 6	5.11990- 8	102	5	16	866
8.40000+ 6	4.60280- 8	8.60000+ 6	4.09570- 8	8.80000+ 6	3.92860- 8	102	5	16	867
9.00000+ 6	3.75930- 8	9.20000+ 6	3.58750- 8	9.40000+ 6	3.41280- 8	102	5	16	868
9.60000+ 6	3.22100- 8	9.80000+ 6	2.87900- 8	1.00000+ 7	2.11080- 8	102	5	16	869
1.02000+ 7	2.01040- 8	1.04000+ 7	1.91250- 8	1.06000+ 7	1.82090- 8	102	5	16	870
1.08000+ 7	1.73620- 8	1.10000+ 7	1.34480- 8	1.12000+ 7	9.66020- 9	102	5	16	871
1.14000+ 7	9.38750- 9	1.16000+ 7	9.30440- 9	1.18000+ 7	9.53200- 9	102	5	16	872
1.20000+ 7	6.98080- 9	1.22000+ 7	2.87330- 9	1.24000+ 7	3.47450- 9	102	5	16	873
1.26000+ 7	0.0 + 0	1.28000+ 7	0.0 + 0			102	5	16	874

.....10.....		.....20.....		.....30.....		.....40.....		.....50.....		.....60.....		MAT	MF	MT	SEQ
0.0	+ 0	1.60000+	7	0	0	0	0	1	70	102	5	16	875		
	70		2	0	0	0	0	0	0	102	5	16	876		
0.0	+ 0	0.0	+ 0	2.00000+	5	2.53530-	7	4.00000+	5	2.52490-	7	102	5	16	877
6.00000+	5	2.27830-	7	8.00000+	5	2.02190-	7	1.00000+	6	1.80810-	7	102	5	16	878
1.20000+	6	1.56440-	7	1.40000+	6	1.35560-	7	1.60000+	6	1.22350-	7	102	5	16	879
1.80000+	6	1.08010-	7	2.00000+	6	1.00070-	7	2.20000+	6	9.53580-	8	102	5	16	880
2.40000+	6	9.64040-	8	2.60000+	6	9.44990-	8	2.80000+	6	9.39390-	8	102	5	16	881
3.00000+	6	9.61130-	8	3.20000+	6	9.59860-	8	3.40000+	6	9.43090-	8	102	5	16	882
3.60000+	6	9.62920-	8	3.80000+	6	9.84480-	8	4.00000+	6	9.64560-	8	102	5	16	883
4.20000+	6	9.56590-	8	4.40000+	6	9.68130-	8	4.60000+	6	9.77970-	8	102	5	16	884
4.80000+	6	9.86800-	8	5.00000+	6	9.64370-	8	5.20000+	6	9.11230-	8	102	5	16	885
5.40000+	6	9.08390-	8	5.60000+	6	9.02830-	8	5.80000+	6	8.94860-	8	102	5	16	886
6.00000+	6	8.85180-	8	6.20000+	6	8.32060-	8	6.40000+	6	7.93160-	8	102	5	16	887
6.60000+	6	7.73330-	8	6.80000+	6	7.52120-	8	7.00000+	6	7.30320-	8	102	5	16	888
7.20000+	6	7.08610-	8	7.40000+	6	6.87080-	8	7.60000+	6	6.43140-	8	102	5	16	889
7.80000+	6	5.62510-	8	8.00000+	6	5.44910-	8	8.20000+	6	5.27460-	8	102	5	16	890
8.40000+	6	5.10110-	8	8.60000+	6	4.92780-	8	8.80000+	6	4.75100-	8	102	5	16	891
9.00000+	6	4.27360-	8	9.20000+	6	3.79590-	8	9.40000+	6	3.66410-	8	102	5	16	892
9.60000+	6	3.52990-	8	9.80000+	6	3.39300-	8	1.00000+	7	3.25350-	8	102	5	16	893
1.02000+	7	3.11030-	8	1.04000+	7	2.94560-	8	1.06000+	7	2.64540-	8	102	5	16	894
1.08000+	7	1.93380-	8	1.10000+	7	1.85350-	8	1.12000+	7	1.77450-	8	102	5	16	895
1.14000+	7	1.69970-	8	1.16000+	7	1.63380-	8	1.18000+	7	1.25700-	8	102	5	16	896
1.20000+	7	8.94050-	9	1.22000+	7	8.70400-	9	1.24000+	7	8.57720-	9	102	5	16	897
1.26000+	7	8.68030-	9	1.28000+	7	8.62770-	9	1.30000+	7	6.61090-	9	102	5	16	898
1.32000+	7	2.79100-	9	1.34000+	7	3.46270-	9	1.36000+	7	0.0	+ 0	102	5	16	899
1.38000+	7	0.0	+ 0								102	5	16	900	
0.0	+ 0	1.70000+	7	0	0	0	0	1	75	102	5	16	901		
	75		2	0	0	0	0	0	0	102	5	16	902		
0.0	+ 0	0.0	+ 0	2.00000+	5	2.43840-	7	4.00000+	5	2.44030-	7	102	5	16	903
6.00000+	5	2.20660-	7	8.00000+	5	1.95670-	7	1.00000+	6	1.74390-	7	102	5	16	904
1.20000+	6	1.56930-	7	1.40000+	6	1.29760-	7	1.60000+	6	1.15430-	7	102	5	16	905
1.80000+	6	1.04250-	7	2.00000+	6	9.88010-	8	2.20000+	6	9.22330-	8	102	5	16	906
2.40000+	6	8.82420-	8	2.60000+	6	8.92200-	8	2.80000+	6	8.74150-	8	102	5	16	907
3.00000+	6	8.68090-	8	3.20000+	6	8.85060-	8	3.40000+	6	8.83100-	8	102	5	16	908
3.60000+	6	8.66530-	8	3.80000+	6	8.81730-	8	4.00000+	6	8.97730-	8	102	5	16	909
4.20000+	6	8.81930-	8	4.40000+	6	8.72750-	8	4.60000+	6	8.82330-	8	102	5	16	910
4.80000+	6	8.90330-	8	5.00000+	6	8.96980-	8	5.20000+	6	9.03020-	8	102	5	16	911
5.40000+	6	8.80970-	8	5.60000+	6	8.30840-	8	5.80000+	6	8.27610-	8	102	5	16	912
6.00000+	6	8.22280-	8	6.20000+	6	8.15000-	8	6.40000+	6	8.06360-	8	102	5	16	913
6.60000+	6	7.60090-	8	6.80000+	6	7.24850-	8	7.00000+	6	7.08580-	8	102	5	16	914
7.20000+	6	6.91080-	8	7.40000+	6	6.72970-	8	7.60000+	6	6.54790-	8	102	5	16	915
7.80000+	6	6.36920-	8	8.00000+	6	6.19140-	8	8.20000+	6	5.80930-	8	102	5	16	916
8.40000+	6	5.08670-	8	8.60000+	6	4.94500-	8	8.80000+	6	4.80440-	8	102	5	16	917
9.00000+	6	4.66430-	8	9.20000+	6	4.52410-	8	9.40000+	6	4.38200-	8	102	5	16	918
9.60000+	6	4.22170-	8	9.80000+	6	3.81690-	8	1.00000+	7	3.39230-	8	102	5	16	919
1.02000+	7	3.28630-	8	1.04000+	7	3.17770-	8	1.06000+	7	3.06640-	8	102	5	16	920
1.08000+	7	2.95220-	8	1.10000+	7	2.83380-	8	1.12000+	7	2.68830-	8	102	5	16	921
1.14000+	7	2.42690-	8	1.16000+	7	1.76750-	8	1.18000+	7	1.70310-	8	102	5	16	922
1.20000+	7	1.63930-	8	1.22000+	7	1.57800-	8	1.24000+	7	1.52300-	8	102	5	16	923
1.26000+	7	1.45550-	8	1.28000+	7	1.12900-	8	1.30000+	7	8.01240-	9	102	5	16	924
1.32000+	7	7.87990-	9	1.34000+	7	7.87780-	9	1.36000+	7	8.14660-	9	102	5	16	925
1.38000+	7	5.82760-	9	1.40000+	7	2.34580-	9	1.42000+	7	2.70020-	9	102	5	16	926
1.44000+	7	3.41970-	9	1.46000+	7	0.0	+ 0	1.48000+	7	0.0	+ 0	102	5	16	927
0.0	+ 0	1.80000+	7	0	0	0	0	1	80	102	5	16	928		
	80		2	0	0	0	0	0	0	102	5	16	929		

.....10.....		.....20.....		.....30.....		.....40.....		.....50.....		.....60.....		MAT	MF	MT	SEQ
0.0	+ 0	0.0	+ 0	2.00000+	5	2.37920-	7	4.00000+	5	2.39260-	7	102	5	16	930	
6.00000+	5	2.16870-	7	8.00000+	5	1.92300-	7	1.00000+	6	1.71020-	7	102	5	16	931	
1.20000+	6	1.53970-	7	1.40000+	6	1.34140-	7	1.60000+	6	1.17520-	7	102	5	16	932	
1.80000+	6	1.05810-	7	2.00000+	6	9.38620-	8	2.20000+	6	8.91390-	8	102	5	16	933	
2.40000+	6	8.64990-	8	2.60000+	6	8.30240-	8	2.80000+	6	8.38420-	8	102	5	16	934	
3.00000+	6	8.22180-	8	3.20000+	6	8.15830-	8	3.40000+	6	8.29080-	8	102	5	16	935	
3.60000+	6	8.26940-	8	3.80000+	6	8.10530-	8	4.00000+	6	8.22760-	8	102	5	16	936	
4.20000+	6	8.34960-	8	4.40000+	6	8.48570-	8	4.60000+	6	8.30060-	8	102	5	16	937	
4.80000+	6	8.19460-	8	5.00000+	6	8.26350-	8	5.20000+	6	8.31920-	8	102	5	16	938	
5.40000+	6	8.36390-	8	5.60000+	6	8.40530-	8	5.80000+	6	8.18950-	8	102	5	16	939	
6.00000+	6	7.71140-	8	6.20000+	6	7.67730-	8	6.40000+	6	7.62630-	8	102	5	16	940	
6.60000+	6	7.55970-	8	6.80000+	6	7.48070-	8	7.00000+	6	7.39290-	8	102	5	16	941	
7.20000+	6	6.94130-	8	7.40000+	6	6.60400-	8	7.60000+	6	6.45640-	8	102	5	16	942	
7.80000+	6	6.30290-	8	8.00000+	6	6.14780-	8	8.20000+	6	5.99430-	8	102	5	16	943	
8.40000+	6	5.84460-	8	8.60000+	6	5.69420-	8	8.80000+	6	5.35490-	8	102	5	16	944	
9.00000+	6	4.69350-	8	9.20000+	6	4.57690-	8	9.40000+	6	4.46110-	8	102	5	16	945	
9.60000+	6	4.34570-	8	9.80000+	6	4.22970-	8	1.00000+	7	4.11220-	8	102	5	16	946	
1.02000+	7	3.98830-	8	1.04000+	7	3.59920-	8	1.06000+	7	3.19080-	8	102	5	16	947	
1.08000+	7	3.10530-	8	1.10000+	7	3.01750-	8	1.12000+	7	2.92730-	8	102	5	16	948	
1.14000+	7	2.83430-	8	1.16000+	7	2.73800-	8	1.18000+	7	2.63720-	8	102	5	16	949	
1.20000+	7	2.50060-	8	1.22000+	7	2.27170-	8	1.24000+	7	1.64740-	8	102	5	16	950	
1.26000+	7	1.59440-	8	1.28000+	7	1.54170-	8	1.30000+	7	1.49050-	8	102	5	16	951	
1.32000+	7	1.44330-	8	1.34000+	7	1.40250-	8	1.36000+	7	1.06810-	8	102	5	16	952	
1.38000+	7	7.49170-	9	1.40000+	7	7.36720-	9	1.42000+	7	7.32060-	9	102	5	16	953	
1.44000+	7	7.42980-	9	1.46000+	7	7.84720-	9	1.48000+	7	5.53330-	9	102	5	16	954	
1.50000+	7	2.26580-	9	1.52000+	7	2.66040-	9	1.54000+	7	3.41950-	9	102	5	16	955	
1.56000+	7	0.0	+ 0	1.58000+	7	0.0	+ 0					102	5	16	956	
0.0	+ 0	1.90000+	7	0	0	0	0					85	102	5	16	957
	85	2	0	0	0	0	0					0	102	5	16	958
0.0	+ 0	0.0	+ 0	2.00000+	5	2.28290-	7	4.00000+	5	2.30680-	7	102	5	16	959	
6.00000+	5	2.09660-	7	8.00000+	5	1.85980-	7	1.00000+	6	1.65160-	7	102	5	16	960	
1.20000+	6	1.48270-	7	1.40000+	6	1.34890-	7	1.60000+	6	1.18870-	7	102	5	16	961	
1.80000+	6	1.05400-	7	2.00000+	6	9.59790-	8	2.20000+	6	8.59970-	8	102	5	16	962	
2.40000+	6	8.21420-	8	2.60000+	6	7.99580-	8	2.80000+	6	7.69470-	8	102	5	16	963	
3.00000+	6	7.76040-	8	3.20000+	6	7.61750-	8	3.40000+	6	7.55400-	8	102	5	16	964	
3.60000+	6	7.65790-	8	3.80000+	6	7.78210-	8	4.00000+	6	7.73850-	8	102	5	16	965	
4.20000+	6	7.57460-	8	4.40000+	6	7.67040-	8	4.60000+	6	7.76930-	8	102	5	16	966	
4.80000+	6	7.88180-	8	5.00000+	6	7.68260-	8	5.20000+	6	7.57010-	8	102	5	16	967	
5.40000+	6	7.61830-	8	5.60000+	6	7.65540-	8	5.80000+	6	7.68400-	8	102	5	16	968	
6.00000+	6	7.71150-	8	6.20000+	6	7.50580-	8	6.40000+	6	7.05870-	8	102	5	16	969	
6.60000+	6	7.02470-	8	6.80000+	6	6.97740-	8	7.00000+	6	6.91760-	8	102	5	16	970	
7.20000+	6	6.84750-	8	7.40000+	6	6.77140-	8	7.60000+	6	6.37350-	8	102	5	16	971	
7.80000+	6	6.06710-	8	8.00000+	6	5.94390-	8	8.20000+	6	5.81510-	8	102	5	16	972	
8.40000+	6	5.68430-	8	8.60000+	6	5.55410-	8	8.80000+	6	5.42650-	8	102	5	16	973	
9.00000+	6	5.30260-	8	9.20000+	6	5.17600-	8	9.40000+	6	4.87830-	8	102	5	16	974	
9.60000+	6	4.27990-	8	9.80000+	6	4.18510-	8	1.00000+	7	4.09060-	8	102	5	16	975	
1.02000+	7	3.99620-	8	1.04000+	7	3.90120-	8	1.06000+	7	3.80500-	8	102	5	16	976	
1.08000+	7	3.70490-	8	1.10000+	7	3.57980-	8	1.12000+	7	3.25570-	8	102	5	16	977	
1.14000+	7	2.88760-	8	1.16000+	7	2.81760-	8	1.18000+	7	2.74540-	8	102	5	16	978	
1.20000+	7	2.67070-	8	1.22000+	7	2.59340-	8	1.24000+	7	2.51270-	8	102	5	16	979	
1.26000+	7	2.42700-	8	1.28000+	7	2.29230-	8	1.30000+	7	2.10150-	8	102	5	16	980	
1.32000+	7	1.51690-	8	1.34000+	7	1.47370-	8	1.36000+	7	1.43060-	8	102	5	16	981	
1.38000+	7	1.38820-	8	1.40000+	7	1.34830-	8	1.42000+	7	1.31400-	8	102	5	16	982	
1.44000+	7	1.02420-	8	1.46000+	7	9.72420-	9	1.48000+	7	6.78930-	9	102	5	16	983	
1.50000+	7	6.72830-	9	1.52000+	7	6.75740-	9	1.54000+	7	6.96910-	9	102	5	16	984	

...	10	20	30	40	50	60	MAT	MF	MT	SEQ
1.56000+	7 7.41650-	9 1.58000+	7 5.20250-	9 1.60000+	7 2.16380-	9	102	5	16	985
1.62000+	7 2.58680-	9 1.64000+	7 3.34710-	9 1.66000+	7 0.0	+ 0	102	5	16	986
1.68000+	7 0.0	+ 0					102	5	16	987
0.0	+ 0 2.00000+	7	0	0	1	90	102	5	16	988
	90	2	0	0	0	0	102	5	16	989
0.0	+ 0 0.0	+ 0 2.00000+	5 2.24440-	7 4.00000+	5 2.27890-	7	102	5	16	990
6.00000+	5 2.07720-	7 8.00000+	5 1.84410-	7 1.00000+	6 1.63610-	7	102	5	16	991
1.20000+	6 1.46530-	7 1.40000+	6 1.32970-	7 1.60000+	6 1.19290-	7	102	5	16	992
1.80000+	6 1.02000-	7 2.00000+	6 9.30090-	8 2.20000+	6 8.56960-	8	102	5	16	993
2.40000+	6 8.10170-	8 2.60000+	6 7.77460-	8 2.80000+	6 7.58660-	8	102	5	16	994
3.00000+	6 7.31650-	8 3.20000+	6 7.37020-	8 3.40000+	6 7.24070-	8	102	5	16	995
3.60000+	6 7.17690-	8 3.80000+	6 7.26150-	8 4.00000+	6 7.36020-	8	102	5	16	996
4.20000+	6 7.32120-	8 4.40000+	6 7.16200-	8 4.60000+	6 7.24150-	8	102	5	16	997
4.80000+	6 7.31970-	8 5.00000+	6 7.40530-	8 5.20000+	6 7.24100-	8	102	5	16	998
5.40000+	6 7.12610-	8 5.60000+	6 7.16930-	8 5.80000+	6 7.20300-	8	102	5	16	999
6.00000+	6 7.22740-	8 6.20000+	6 7.24500-	8 6.40000+	6 7.26320-	8	102	5	16	1000
6.60000+	6 7.06410-	8 6.80000+	6 6.63630-	8 7.00000+	6 6.60250-	8	102	5	16	1001
7.20000+	6 6.55810-	8 7.40000+	6 6.50330-	8 7.60000+	6 6.43970-	8	102	5	16	1002
7.80000+	6 6.37030-	8 8.00000+	6 6.29550-	8 8.20000+	6 5.91040-	8	102	5	16	1003
8.40000+	6 5.61680-	8 8.60000+	6 5.50550-	8 8.80000+	6 5.39190-	8	102	5	16	1004
9.00000+	6 5.27820-	8 9.20000+	6 5.16650-	8 9.40000+	6 5.05750-	8	102	5	16	1005
9.60000+	6 4.95190-	8 9.80000+	6 4.84110-	8 1.00000+	7 4.57260-	8	102	5	16	1006
1.02000+	7 4.01560-	8 1.04000+	7 3.93590-	8 1.06000+	7 3.85650-	8	102	5	16	1007
1.08000+	7 3.77690-	8 1.10000+	7 3.69690-	8 1.12000+	7 3.61560-	8	102	5	16	1008
1.14000+	7 3.53140-	8 1.16000+	7 3.43880-	8 1.18000+	7 3.11330-	8	102	5	16	1009
1.20000+	7 2.75350-	8 1.22000+	7 2.69620-	8 1.24000+	7 2.63700-	8	102	5	16	1010
1.26000+	7 2.57550-	8 1.28000+	7 2.51160-	8 1.30000+	7 2.44510-	8	102	5	16	1011
1.32000+	7 2.37510-	8 1.34000+	7 2.29940-	8 1.36000+	7 2.14730-	8	102	5	16	1012
1.38000+	7 2.00040-	8 1.40000+	7 1.43690-	8 1.42000+	7 1.40070-	8	102	5	16	1013
1.44000+	7 1.36430-	8 1.46000+	7 1.32830-	8 1.48000+	7 1.29370-	8	102	5	16	1014
1.50000+	7 1.26290-	8 1.52000+	7 1.22920-	8 1.54000+	7 9.31890-	9	102	5	16	1015
1.56000+	7 6.42470-	9 1.58000+	7 6.36130-	9 1.60000+	7 6.35400-	9	102	5	16	1016
1.62000+	7 6.45350-	9 1.64000+	7 6.77270-	9 1.66000+	7 4.70330-	9	102	5	16	1017
1.68000+	7 1.89110-	9 1.70000+	7 2.12750-	9 1.72000+	7 2.58610-	9	102	5	16	1018
1.74000+	7 3.32190-	9 1.76000+	7 0.0	+ 0 1.78000+	7 0.0	+ 0	102	5	16	1019
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							102	0	0	1021
							0	0	0	1022
							-1	0	0	0

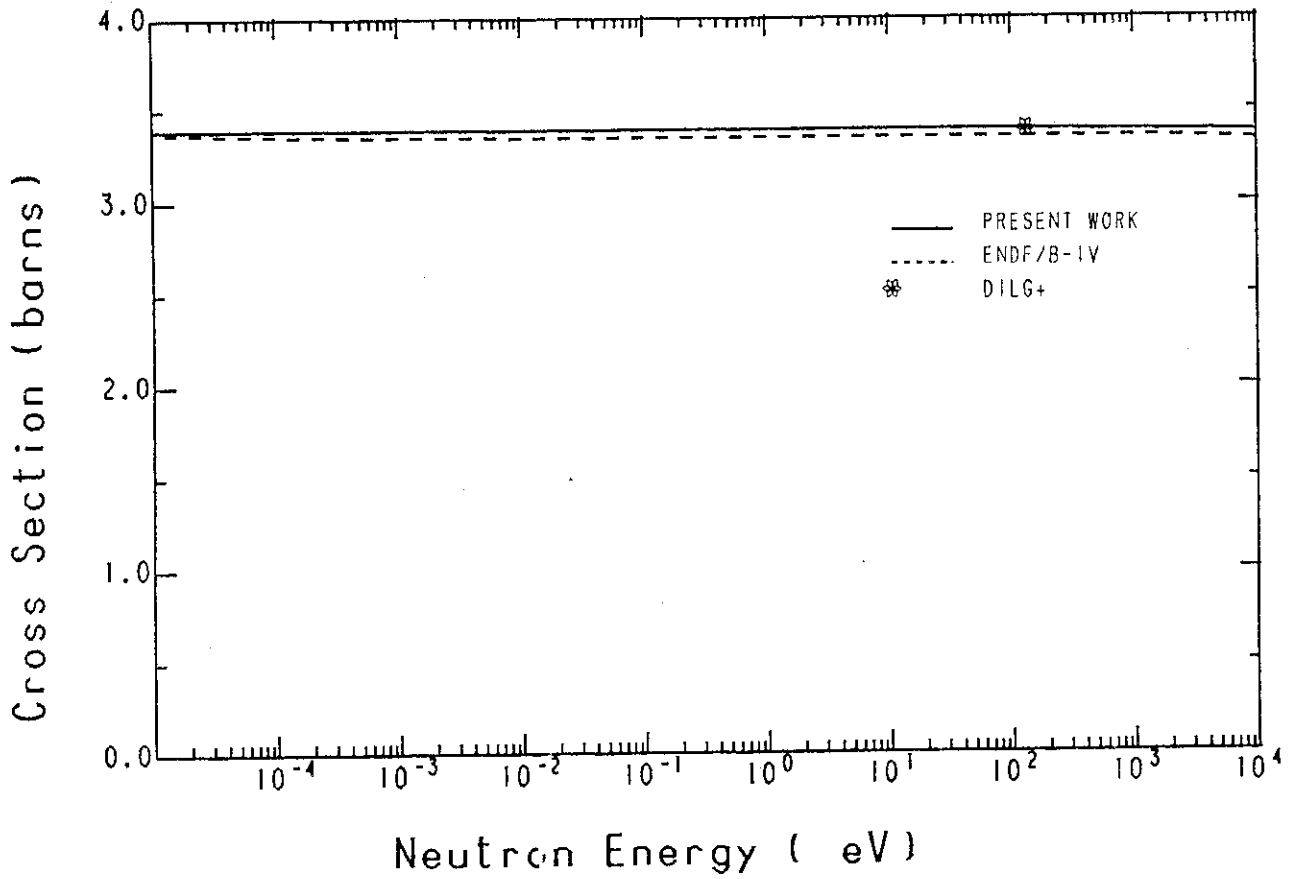


Fig. 1 Measured and evaluated total cross sections from 10^{-5} eV to 10keV.

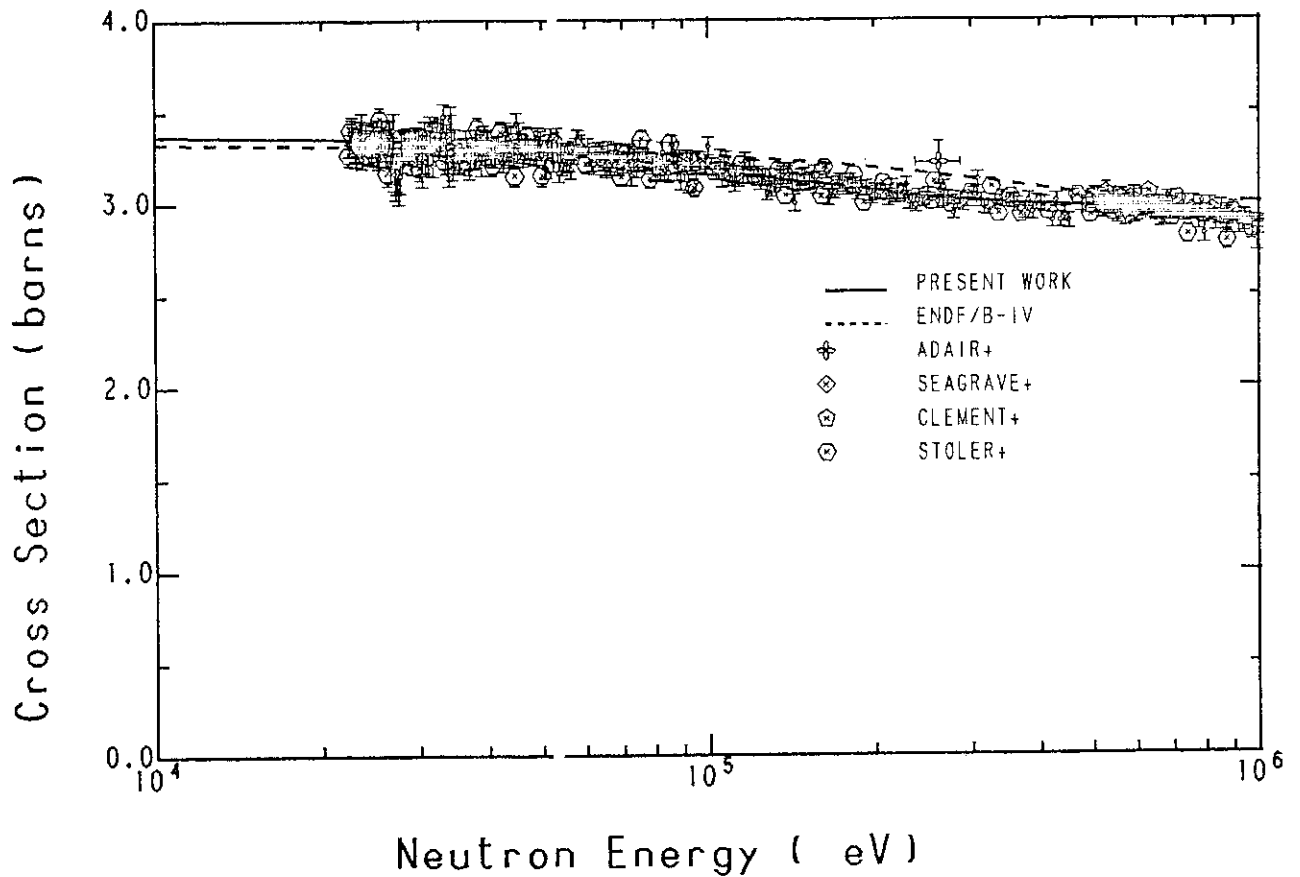


Fig. 2 Measured and evaluated total cross sections from 10 keV to 1 MeV.

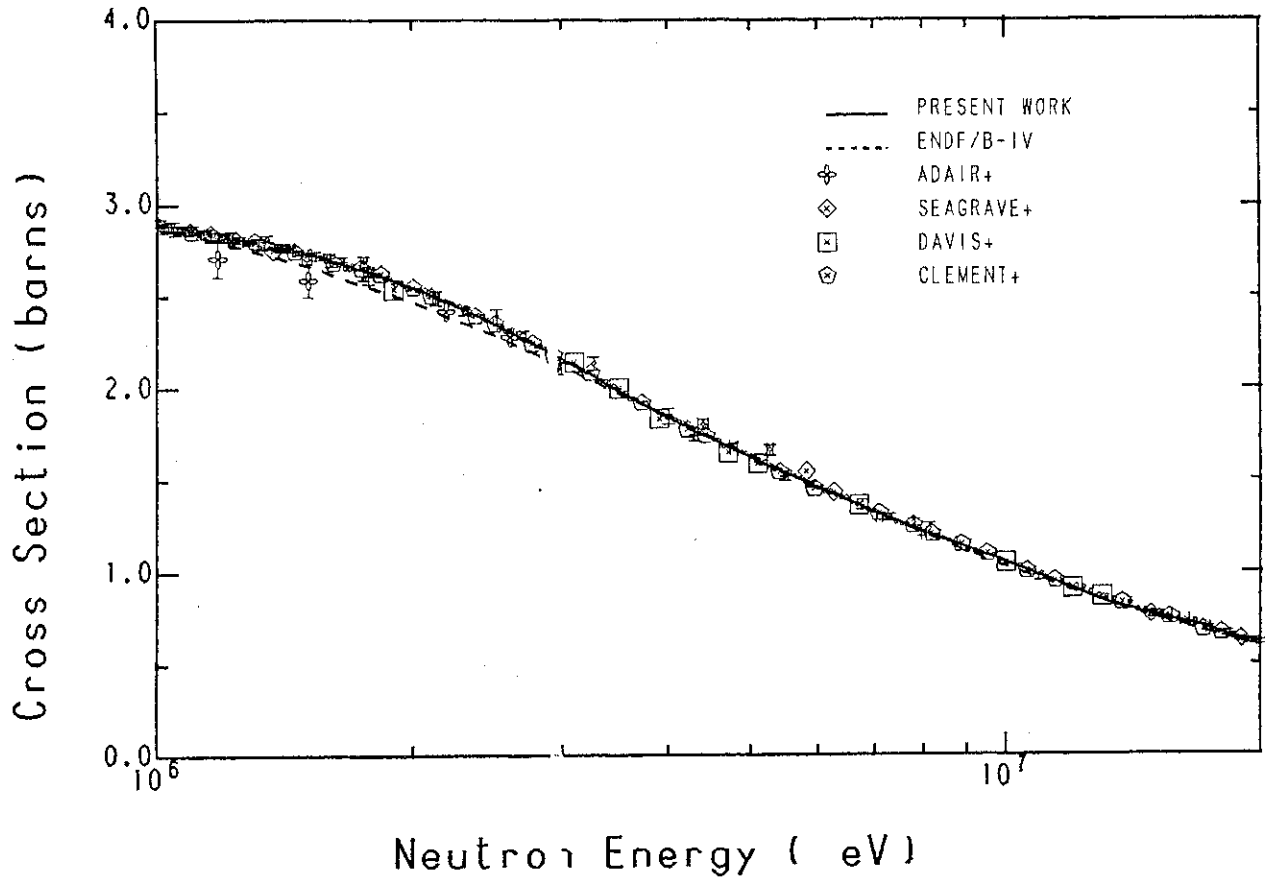


Fig. 3 Measured and evaluated total cross sections from 1 MeV to 20 MeV.

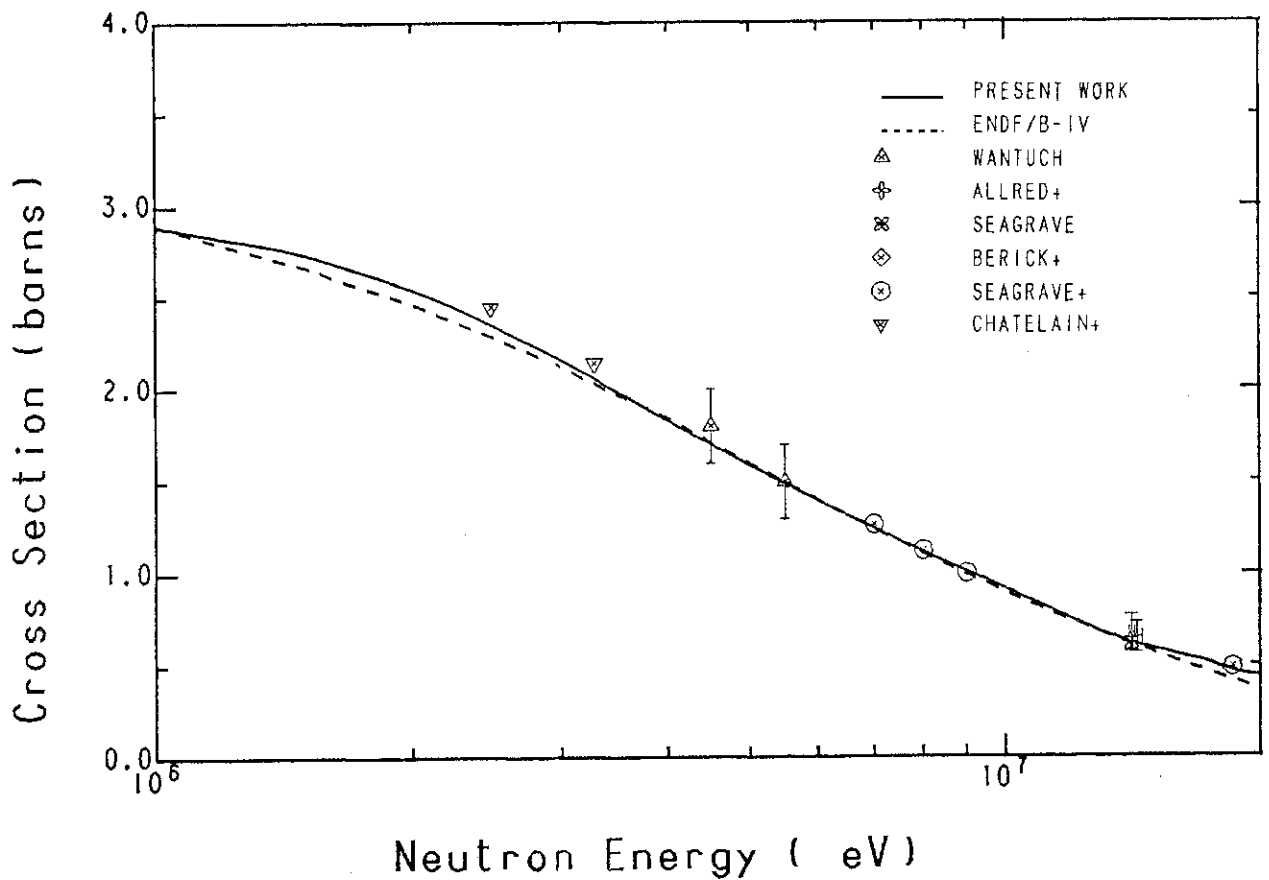


Fig. 4 Measured and evaluated elastic scattering cross sections from 1 MeV to 20 MeV.

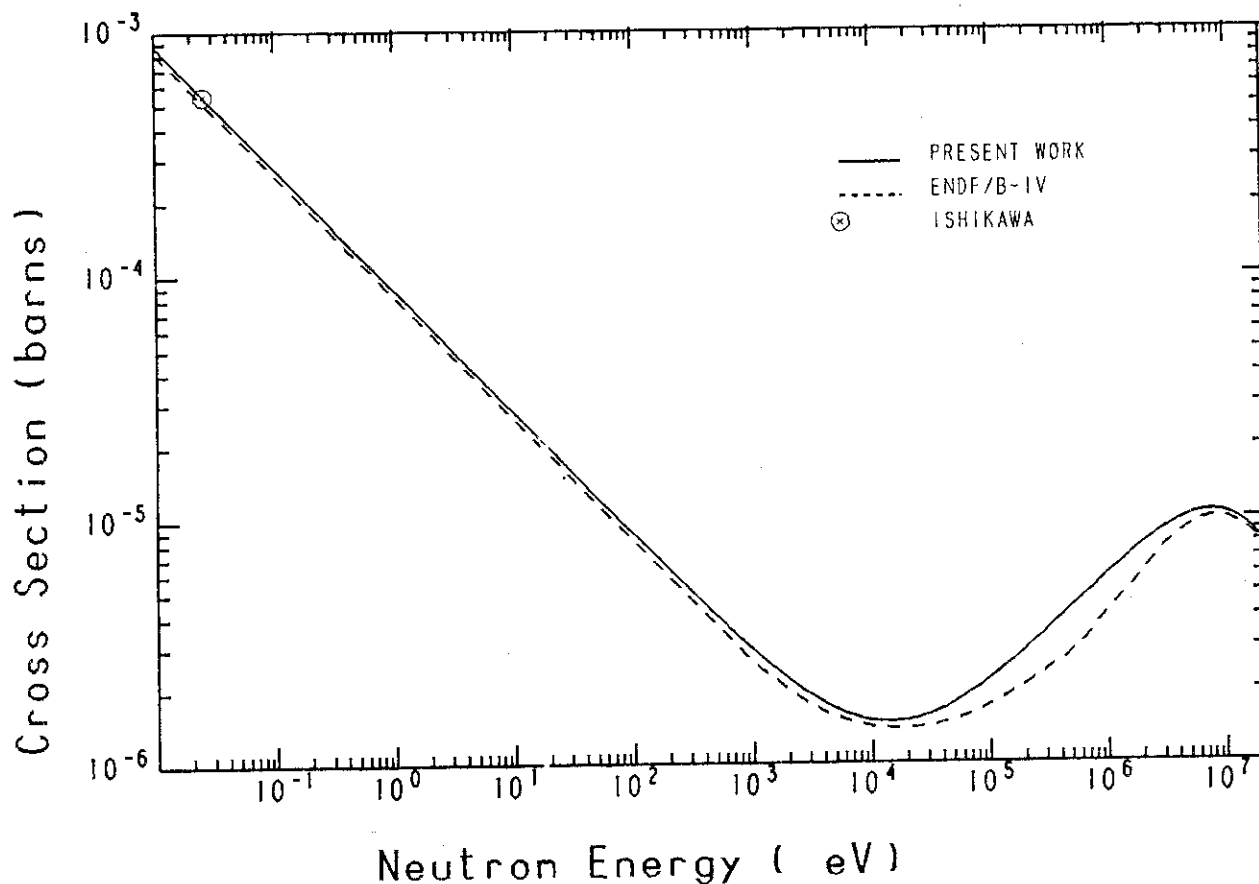


Fig. 5 Measured and evaluated capture cross sections.

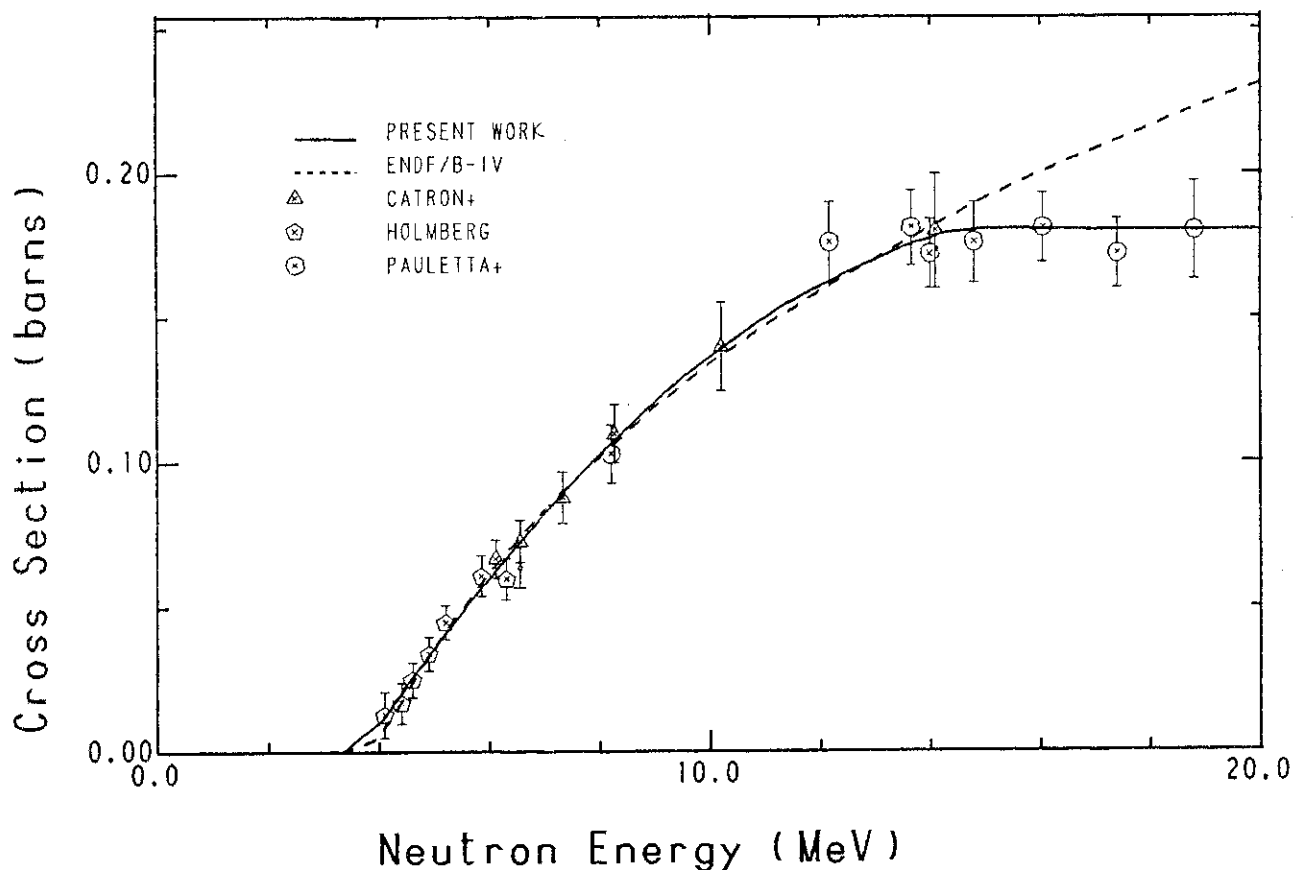


Fig. 6 Measured and evaluated (n,2n) reaction cross sections.

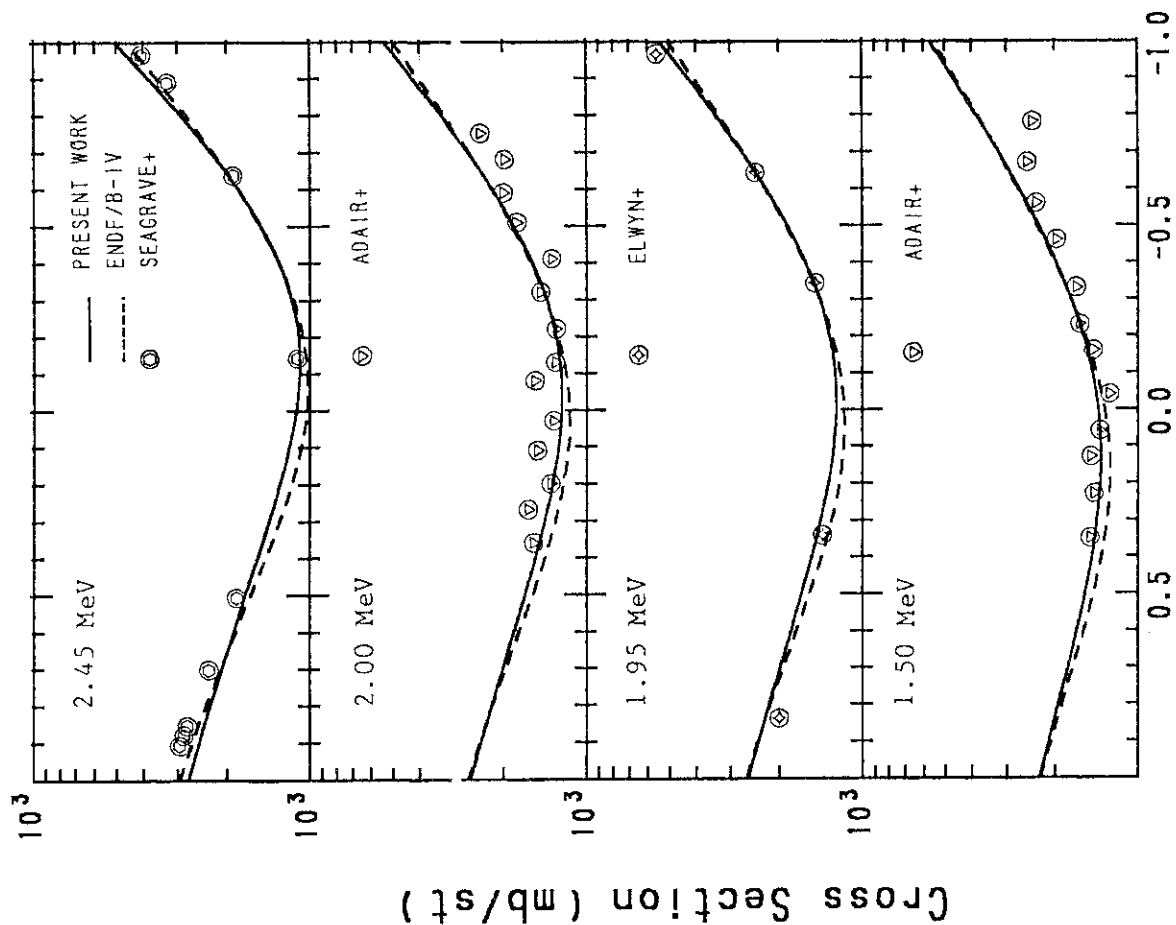
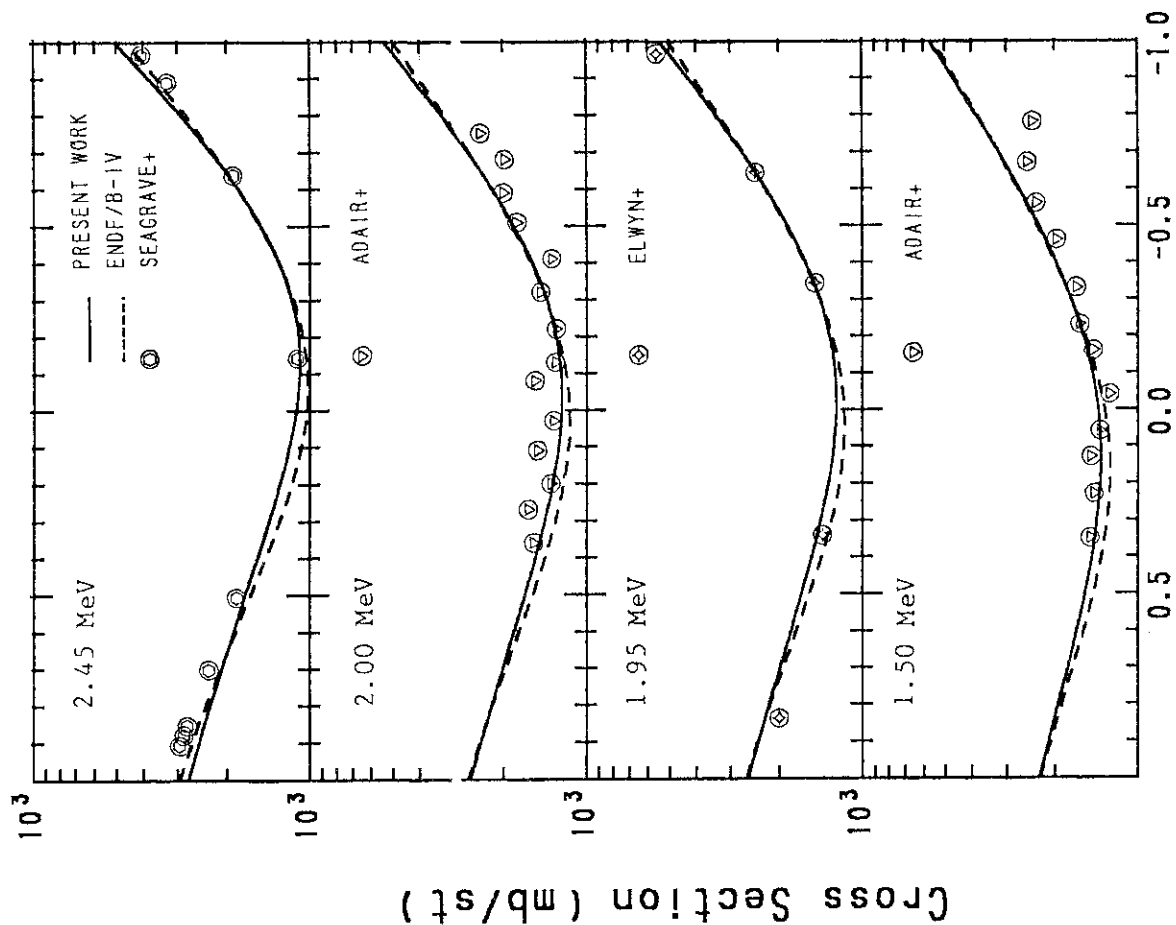


Fig. 7 Measured and evaluated elastic angular distributions from 0.1 to 0.75 MeV.



Cosine

Fig. 8 Measured and evaluated elastic angular distributions from 1.5 to 2.45 MeV.

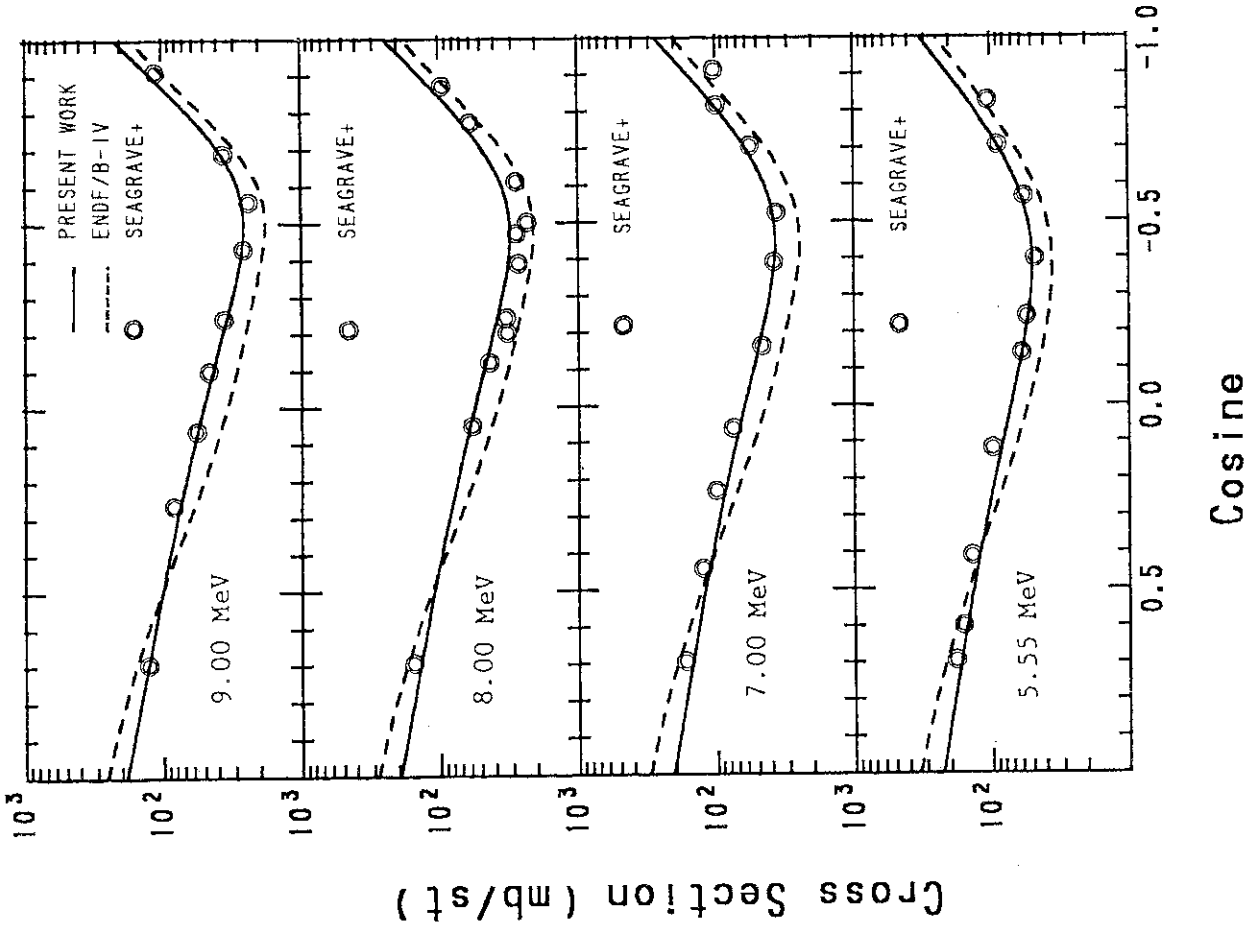


Fig. 9 Measured and evaluated elastic angular distributions from 2.5 to 5.5 MeV.

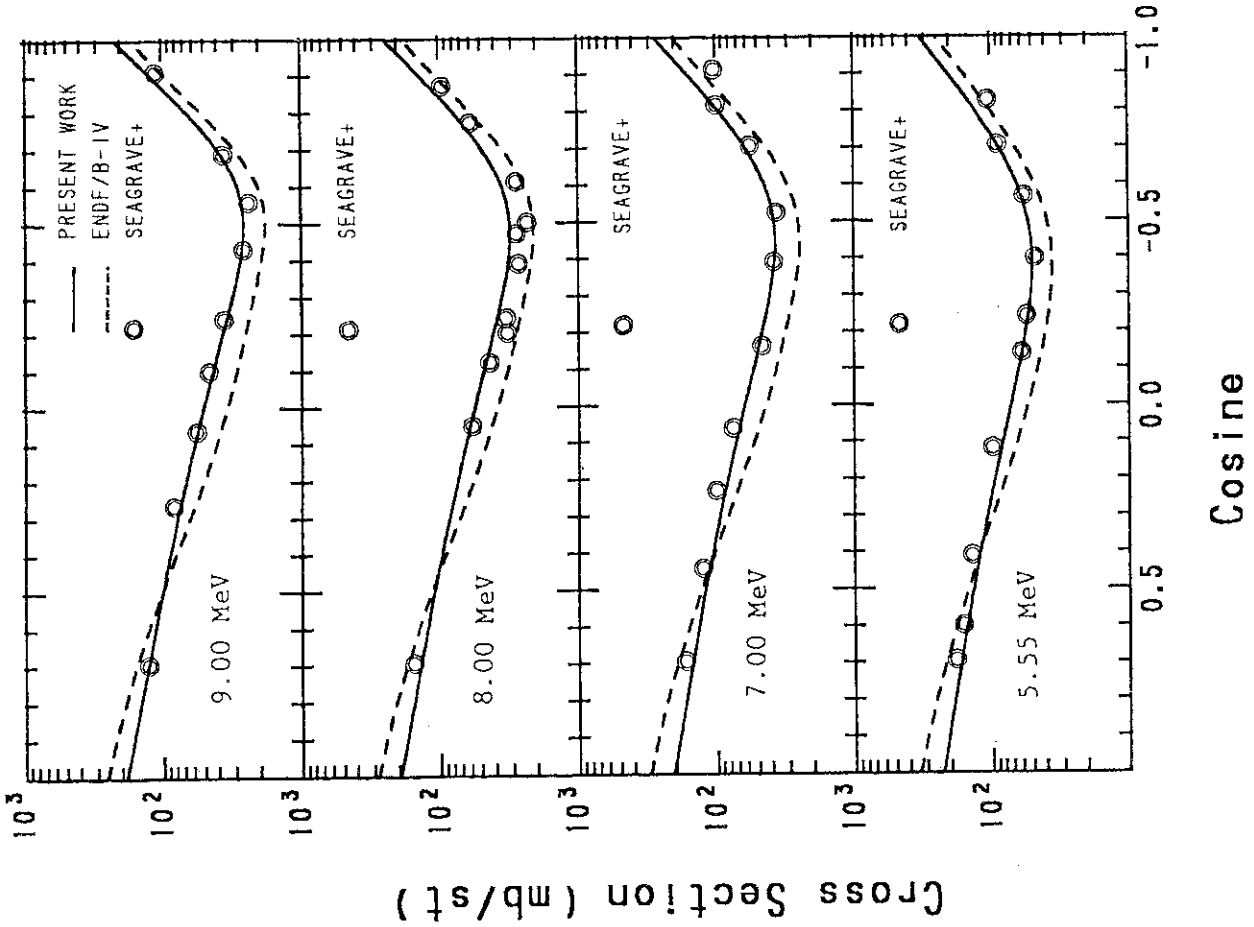


Fig. 10 Measured and evaluated elastic angular distributions from 5.55 to 9.0 MeV.

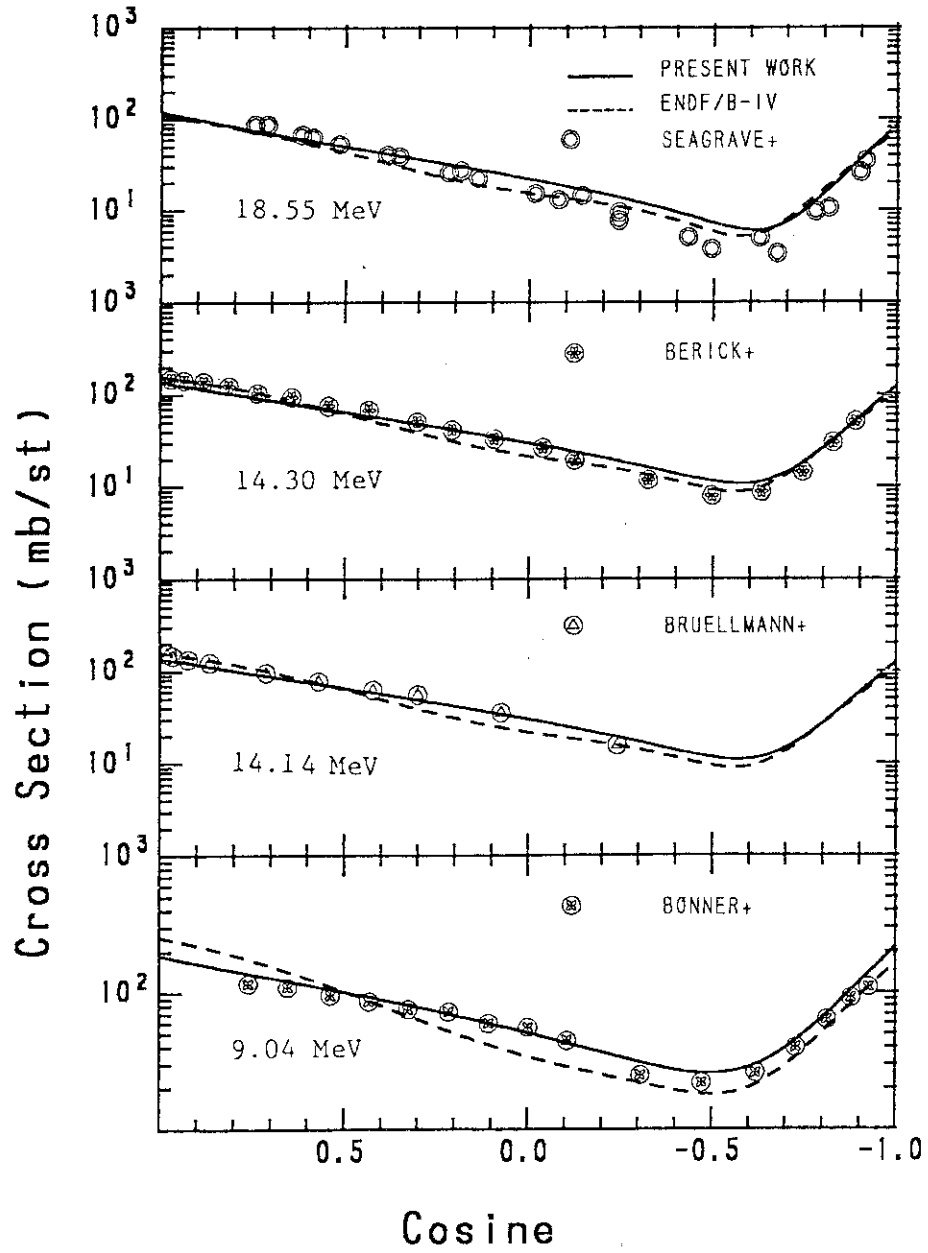


Fig. 11 Measured and evaluated elastic angular distributions from 9.04 to 18.55 MeV.

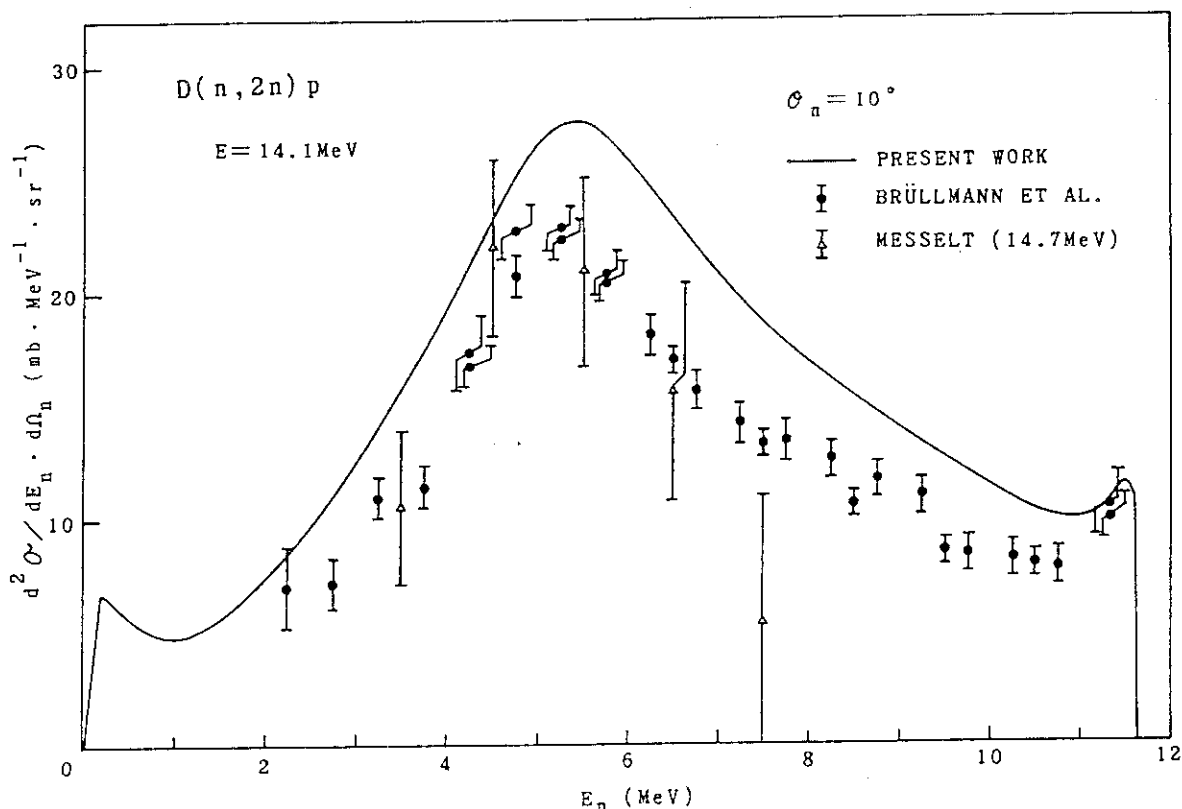


Fig. 12 Measured and evaluated double-differential cross sections for the (n,2n) reaction at 10°.

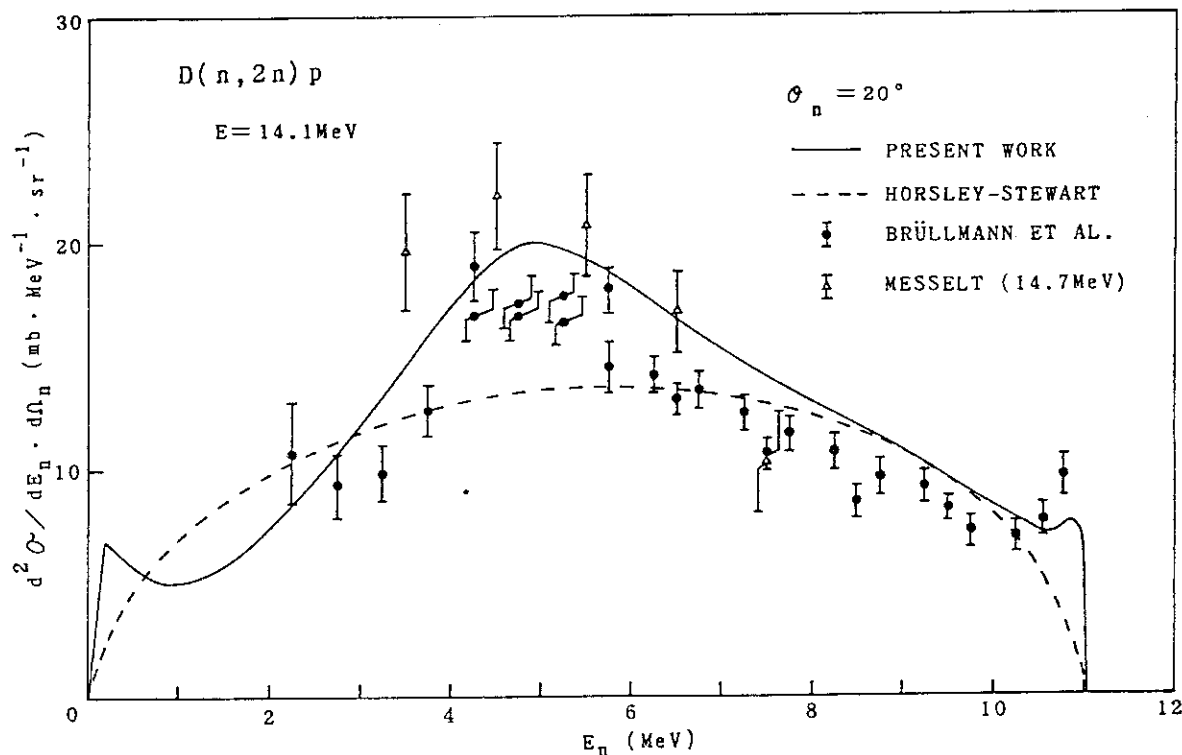


Fig. 13 Measured and evaluated double-differential cross sections for the (n,2n) reaction at 20°. The dashed curve is the evaluation of Horsley and Stewart¹⁾.

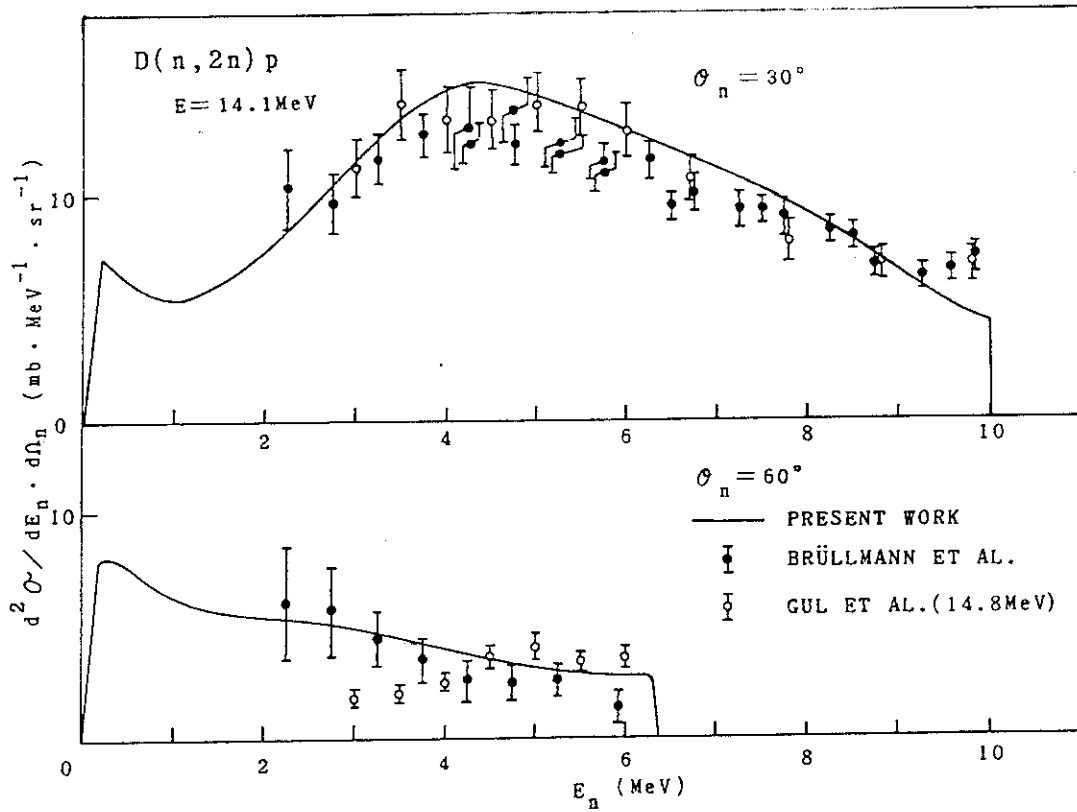


Fig. 14 Measured and evaluated double-differential cross sections for the (n,2n) reaction at 30° and 60°.