



INTERNATIONAL ATOMIC ENERGY AGENCY

Rev. 6

NUCLEAR DATA SERVICESDOCUMENTATION SERIES OF THE IAEA NUCLEAR DATA SECTION

INEL/A

IAEA Nuclear Data Library for
Evaluated Neutron Reaction Data of Actinides

Contents and Documentation

This Library contains evaluations performed by participants of the IAEA Coordinated Research Project on the Intercomparison of Evaluations of Actinide Neutron Nuclear Data. The data are available on magnetic tape, free of charge, from the IAEA Nuclear Data Section.

H.D. Lemmel, editor

May 1982

IAEA NUCLEAR DATA SECTION, P.O. BOX 100, A-1400 VIENNA

The tape contains five files:

A. Complete evaluations

File 1: ENDF/B format

3371		93-Np-237	Cadarache	INDC(FR)-42
4381		94-Pu-238	Cadarache	INDC(FR)- to be published
5161		94-Pu-242	Bruyères-le-Châtel	CEA-N-2084
9421	Rev.2	94-Pu-239	Minsk	INDC(CCP)-166
9431	Rev.1	94-Pu-240	Minsk	unpublished
9440	Rev.0	94-Pu-241	Minsk	INDC(CCP)-142
9450	Rev.2	94-Pu-242	Minsk	INDC(CCP)-150
9521		95-Am-242	JAERI	JAERI-M-8903
9522		95-Am-242-m	JAERI	JAERI-M-8903
9543		95-Am-243	JAERI	IAEA-NDS-12/1 *)
9642		96-Cm-242	JAERI	IAEA-NDS-12/2 *)
9643		96-Cm-243	JAERI	IAEA-NDS-12/5 *)
9644		96-Cm-244	JAERI	IAEA-NDS-12/1 *)
9645		96-Cm-245	JAERI	IAEA-NDS-12/3 *)
9662		96-Cm-242	Bologna	INDC(ITY)-7
9663		96-Cm-243	Bologna	CNEN-RT/FI(81)23
9665		96-Cm-245	Bologna	CNEN-RT/FI(81)24
9666		96-Cm-246	Bologna	INDC(ITY)-8
9990	Rev.81	90-Th-232	Romania	INDC(RUM)-10
9993	Rev.81	91-Pa-233	Romania	INDC(ROM)-12

File 2: UKNDL format

1009	B	95-Am-241	Harwell	AERE-R-8528
1010		95-Am-243	Harwell	progress report 1981

File 3: KEDAK format

1		96-Cm-244	Soreq	IA-1353
2		96-Cm-246	Soreq	IA-1358

B. Partial evaluations

File 4: ENDF/B-4 format, resolved resonance region

9441		94-Pu-241	Bologna	IAEA-NDS-12/4 *)
9442		94-Pu-242	Bologna	CNEN-RT/FI-(79)1
9541		95-Am-241	Bologna	CNEN-RT/FI-(79)6
9543		95-Am-243	Bologna	Not documented
9646		96-Cm-246	Bologna	CNEN-RT/FI-(80)7
9647		96-Cm-247	Bologna	Not documented
9648		96-Cm-248	Bologna	CNEN-RT/FI-(80)10

File 5: ENDF/B-5 format, fission cross-section converted from UKNDL format

9509		95-Am-241	Harwell, Stuttgart conversion From UKNDL-1009-B	AERE-R-8528
------	--	-----------	---	-------------

*) Available as microfiche from IAEA-NDS upon request
INDC reports available from IAEA-NDS upon request

File 1: Complete evaluations in ENDF/B format

Documentation of format: BNL-NCS-50496, October 1975

Note: Not all of the evaluations follow the ENDF/B rules strictly. For example, resonance parameters and cross-section data are sometimes both included. Caution is therefore required before applying ENDF/B computer programs.

Accession number 3371

93-Np-237

1830 records, date of release 81/3

Authors: H. Derrien, J.P. Doat, E. Fort, D. Lafond
Cadarache, France, 1981

Complete documentation: Report INDC(FR)-42 (dated Sept. 1980)

Title: Evaluation of Np-237 Neutron Cross-Sections in the Energy Range from 10^{-5} eV to 14 MeV.

Compare 1979 Knoxville Conference on Nuclear Cross-Sections for Technology, page 872

Accession-number 4381

94-Pu-238

announced August 1981

Author: H. Derrien
Cadarache, France, 1981

Complete documentation: Report INDC(FR)-.. to be published,
(see working paper 6 at 1981 CRP Meeting)

Title: Evaluation of Pu-238 Neutron Cross-Sections in the Energy Range 10^{-5} eV to 3 MeV.

Accession-number 5161

94-Pu-242

1165 records, date of release 79/3

Authors: J. Jary, Ch. Lagrange, C. Philis, J. Salvy
Bruyères-le-Châtel, France 1979

Complete documentation: Report CEA-N-2084 (June 1979)

Title: Compte Rendu de Travaux sur l'Evaluation de Données Nucléaires Relatives aux Actinides (Pu-240, Pu-242, Th-232)

Accession-number 9421

94-Pu-239

2222 records, evaluated Sept. 1980, Rev.2 Dec. 1981

Authors: G.V. Antsipov, L.A. Bakhanovich, V.F. Zharkov, V.A. Zenevich
A.B. Klepatskii, V.A. Konshin, V.M. Maslov, G.B. Morogovskii,
Ju.V. Porodzinskii, E.Sh. Sukhovitskii
Inst. Teplo-i Massoobmena (ITM) imeni A.V. Lykova, Minsk, USSR

Title: Nuclear Data Evaluation for Pu-239 in the Energy Region
from 0 to 15 MeV

Reports: ITM preprints nr. 12 to 16, Minsk 1981
English translation see INDC(CCP)-166, IAEA, June 1981

This evaluation supersedes the 1974 evaluation by same authors known as
SOKRATOR-2021 and INDL/V-9420.

Accession-number 9431

94-Pu-240

1768 records, received Nov. 1981, Rev. 1 Dec. 1981

Authors: E.S. Sukhovitskii, G.V. Antsipov, V.A. Konshin, A.B. Klepatskii,
V.A. Zenevich, J.V. Porodzinskii
Inst. Teplo-i Massoobmena (ITM) imeni A.V. Lykova, Minsk, USSR

Title: Nuclear Data Evaluation for Pu-240 in the Energy Region
from 0 to 15 MeV

Unpublished

This evaluation supersedes the 1978 evaluation by same authors known as
SOKRATOR-2023 and INDL/V-9430.

Accession-number 9440

94-Pu-241

2507 records, released 79/5 as INDL/A-2024, revised Nov. 1981 under new
accession-number INDL/A-9440 Rev.0.

Authors: V.A. Konshin, G.V. Antsipov, E.Sh. Sukhovitskii, L.A. Bakhanov,
A.B. Klepatskii, G.B. Morogovskii, Ju.V. Porodzinskii
Minsk, USSR, 1979. Revised in 1981

Complete documentation: Report INDC(CCP)-142, translation by IAEA
January 1980

Title: Evaluation of Nuclear Data for Pu-241 in Neutron Energy Range from
0.001 eV to 15 MeV

Accession-number 9450

94-Pu-242

1554 records, released 79/5 as INDL/A-2025, revised Dec. 1981 under new accession number INDL/A-9450 Rev.2

Authors: G.V. Antsipov, L.A. Bakhanovic, A.B. Klepatskii, V.A. Konshin, V.M. Maslov, G.B. Morogovskii, Ju.V. Porodzinski, E.S. Shukovitskii, V.A. Zenevich
Minsk, USSR, 1979. Revised in 1981

Complete documentation: Report INDC(CCP)-150, translation by IAEA July 1980. (A.K. Krasin, editor)

Title: Evaluation of Nuclear Data for Pu-242 in the Neutron Energy Region from 10^{-5} eV to 15 MeV.

Accession-number 9521

95-Am-242

1427 records, received 81/3

Authors: T. Nakagawa et al.
Nuclear Data Center, JAERI, Tokai, Japan, 1980

Evaluation of Neutron Data of Am-242 and Am-242m

Report JAERI-M-8903 (June 1980)

Accession-number 9522

95-Am-242-m

1424 records, received 81/3

Authors: T. Nakagawa et al.
Nuclear Data Center, JAERI, Tokai, Japan, 1980

Evaluation of Neutron Data of Am-242 and Am-242m

Report JAERI-M-8903 (June 1980)

Accession-number 9543

95-Am-243

2635 records, date of release 78/10

Authors: T. Fuketa, S. Igarasi, T. Asami, Y. Kikuchi, T. Nakagawa
Nuclear Data Center, JAERI, Tokai, Japan, 1979

Evaluation of Neutron Data on Am-243 and Cm-244

Report IAEA-NDS-12/1 (Feb. 1979)
Original report JAERI-M-7174 (1977), in Japanese

Accession-number 9642

96-Cm-242

737 records, received 79/11

Authors: S. Igarasi et al.
Nuclear Data Center, JAERI, Tokai, Japan, 1980

Report IAEA-NDS-12/2 (June 1979)
Original report JAERI-M-8342 (1979), in Japanese

Accession-number 9643

96-Cm-243

3928 records, received 81/10

Authors: T. Nakagawa, S. Igarasi
Nuclear Data Center, JAERI, Tokai, Japan, 1981

Report IAEA-NDS-12/5 (July 1981)

Title: Energy Range 10^{-5} eV to 20 MeV

Accession-number 9644

96-Cm-244

2544 records, date of release 78/10

JAERI 1979

Report IAEA-NDS-12/1 (Feb. 1979)

This is a revision of the earlier evaluation published as JAERI-M-7574,
June 1977

Original report JAERI-M-7175 (1977), in Japanese

Accession-number 9645

96-Cm-245

2625 records, received 79/11

Authors: S. Igarasi, T. Nakagawa
Nuclear Data Center, JAERI, Tokai, Japan, 1978

Report IAEA-NDS-12/3 (June 1978)
Original report JAERI-M-7733 (1978), in Japanese

Accession-number 9662

96-Cm-242

831 records, received 82/4

Authors: G. Maino, E. Menapace, M. Motta, M. Vaccari
CNEN, Bologna, Italy

Title: Evaluation of Cm-242 Neutron Cross-Sections from 10^{-5} eV
to 15 MeV

Complete documentation: INDC(ITY)-7 (1982) = TIB/FICS(82)2

The evaluation of the resonance region was contained in report
CNEN-RT/FI/(79)2 (Feb. 1979) and INDL/A File 4 acc-nr. 9642, which is
superseded.

Accession-number 9663

96-Cm-243

(acc-nr. changed from originally 9643 to 9663)

1021 records, received 82/4

Authors: G. Maino, T. Martinelli, E. Menapace, M. Motta, M. Vaccari,
A. Ventura

Complete documentation: CNEN-RT/FI(81)23, October 1981

Title: Evaluation of Cm-243 Neutron Cross-Sections from 10^{-5} eV to 15 MeV

Accession-number 9665

96-Cm-245

(acc-nr. changed from originally 9643 to 9665)

1197 records, received 82/4

Authors: G. Maino, T. Martinelli, E. Menapace, M. Motta, M. Vaccari

Complete documentation: CNEN-RT/FI(81)24, October 1981

Title: Evaluation of Cm-245 Neutron Cross-Sections from 10^{-5} eV to 15MeV

Accession-number 9666

96-Cm-246

(acc-nr. changed from originally 9646 to 9666)

720 records, received 82/4

Authors: G. Maino, E. Menapace, M. Vaccari, A. Ventura

Complete documentation: INDC(ITY)-8, 1982 = TIB/FICS(82)3

Title: Evaluation of Cm-246 neutron cross-sections
from 10^{-5} eV to 15 MeV

Accession-number 9990

90-Th-232

1761 records, date of release 79/2, revised 80/4

Authors: G. Vasiliu, S. Mateescu, D. Gheorghe, M. Clodaru,
E. Badescu, N. Dragan, O. Bujoreanu, C. Craciun,
L. Pintiliecu, M. Zaharcu, D. Popescu, T. Statnicov
V. Avrigeanu
Institute of Nuclear Power Reactors, Pitesti, Romania, 1980

Complete documentation: INDC(RUM)-10, May 1980. A Summary of the
evaluation is included on tape.

Preliminary! Being revised in 1981

Accession-number 9993

91-Pa-233

990 records, date of release 80/5

Authors: G. Vasiliu, S. Mateescu, S. Rapeanu, V. Avrigeanu
M. Clodaru, N. Dragan, T. Statnicov, O. Bujoreanu
Institute of Nuclear Power Reactors, Pitesti, Romania, 1980

Complete documentation: Report INDC(ROM)-12, July 1980

Title: Nuclear Data Evaluation for Pa-233

Preliminary! Being revised in 1981

File 2: Complete evaluations in UKNDL format

Documentation of format: AWRE/0-70/63, 1963

Note: In the case of a 4-digit accession-number its first digit is dropped in the record identification field of each record.

Accession-number 1009 B

95-Am-241

4205 records, date of release 79/3, revised 1980

Authors: J.E. Lynn, B.H. Patrick, M.G. Sowerby, E.M. Bowey
Nuclear Physics Division, AERE, Harwell, U.K.

Complete documentation: AERE-R-8528

Note: Version A contained some small errors in resolved resonance parameters above 50 eV. The corrections were included in a revised report to be published in "Progress in Nuclear Energy".

The fission cross-section was converted by M. Mattes, IKE Stuttgart, to ENDF/B-5 format. See File 5.

Accession-number 1010

95-Am-243

7980 records, date of release 81/9

Authors: J.E. Lynn, B.H. Patrick, M.G. Sowerby, E.M. Bowey
Nuclear Physics Division, AERE, Harwell, UK

Summary of documentation: Progress Report, September 1981

Energy range: 10^{-5} eV - 15 MeV

File 3: Complete evaluations in KEDAK format

Documentation of format: KFK-880, 1968

Accession-number 1

96-Cm-244

2166 records, date of release 79/3. The file is dated 9/11/79 which is the date of conversion from internal KEDAK to standard KEDAK, received at NDS 80/1.

Authors: M. Caner, S. Yiftah
Soreq Nuclear Research Centre, Israel

Title: Curium-244 Neutron Data Evaluation

Report IA-1353, March 1979

Accession-number 2

96-Cm-246

2240 records, date of release 80/6. The file is dated 16/1/81 which is the date of conversion from internal KEDAK to standard KEDAK at Karlsruhe. Date of receipt at NDS 81/3.

Authors: M. Caner, Y. Bartal, S. Yiftah
Israel Atomic Energy Commission

Title: Curium-246 Neutron Data Evaluation

Report IA-1358, June 1980

File 4: Partial evaluations (resolved resonance region) in ENDF/B format

Documentation of format: BNL-NCS-50496, October 1975

Note: The number of records is for all nuclides somewhat larger than originally announced due to the "1451" section added by NDS.

Accession-number 9441

94-Pu-241

149 records, released 79/5

Authors: E. Menapace, M. Motta, A. Ventura
Centro di Calcolo del CNEN, Bologna, Italy

Title: Evaluation of Pu-241 Cross-Sections in the Resonance Region

Report IAEA-NDS-12/4 (Feb. 1979)

Accession-number 9442

94-Pu-242

89 records, released 79/5

Authors: E. Menapace, M. Motta, A. Ventura
Centro di Calcolo del CNEN, Bologna, Italy

Title: Pu-242 Evaluation in Resolved Resonance Region

Report CNEN-RT/FI-(79)1 (Jan. 1979)

See also: Meeting on Nuclear Data of Higher Pu and Am Isotopes,
Brookhaven, November 1978

Accession-number 9541

95-Am-241

248 records, released 79/5

Authors: G. Maino, E. Menapace, M. Motta, A. Ventura

Title: Am-241 Neutron Cross-Sections in the Resonance Region

Report CNEN-RT/FI-(79)6 (Feb. 1979)

Accession-number 9543

95-Am-243

234 records, preliminary data released 79/5

Authors: E. Menapace
Centro di Calcolo del CNEN, Bologna, Italy

Not documented

Accession-number 9642 (superseded)

96-Cm-242

38 records, released 79/5

Authors: E. Menapace, M. Motta, A. Ventura, A. Montaguti
Centro di Calcolo del CNEN, Bologna, Italy

Title: Evaluation of Cm-242 in the Resonance Region

Report CNEN-RT/FI-(79)2 (Feb. 1979)

Superseded by and included in INDL/A file 1 acc.nr. 9662

Accession-number 9646 (superseded)

96-Cm-246

39 records, released 81/5

Authors: T. Martinelli, E. Menapace, M. Motta, M. Vaccari, A. Ventura
Centro di Calcolo del CNEN, Bologna, Italy

Title: Evaluation of Cm-246 Neutron Cross-Sections in the Resonance
Region

Report CNEN-RT/FI-(80)7 (March 1980)

Superseded by and included in INDL/A file 1 acc.nr. 9666

Accession-number 9647

96-Cm-247

65 records, released 81/5

Authors: T. Martinelli, E. Menapace, M. Motta, M. Vaccari
Centro di Calcolo del CNEN, Bologna, Italy

Title: Evaluation of Cm-247 Neutron Cross-Sections in the Resonance
Region

Proceedings of the Second Technical Meeting on the Nuclear Transmutation
of Actinides, Ispra, 21-24 April 1980, p. 171-190

Accession-number 9648

96-Cm-248

54 records, released 81/5

Authors: T. Martinelli, E. Menapace, M. Motta, M. Vaccari, A. Ventura

Title: Evaluation of Cm-248 Neutron Cross-Sections in the Resonance
Region

Report CNEN-RT/FI-(80)10, April 1980

File 5: Data converted from UKNDL format into ENDF/B format

Accession-number 9509

95-Am-241

685 records, December 1981

Conversion by: M. Mattes, Stuttgart

Containing: 95-Am-241(n,f) taken from File 2, Acc-Nr. 1009B,
by J.E. Lynn et al. Data are given pointwise in log-log
interpolation.

Cross-reference: The same data linearized and in 620 group structure, see
data library IRDF-82, acc-nr. 1009

- 13 -

History of INDL/A

Status as of June 1981 is documented in IAEA-NDS-12 Rev. 4.

Contents:

File 1: 2024, 2025, 3371, 5161, 9521, 9522, 9543, 9642, 9644,
9645, 9990, 9993

File 2: 1009 B

File 3: 1, 2

File 4: 9441, 9442, 9541, 9543, 9642, 9646, 9647, 9648

Changes until April 1982

File 1: 2024 replaced by 9440 Rev.0
2025 replaced by 9450 Rev.2

Added: 4381, 9421, 9431, 9440, 9450, 9643,
9662, 9663, 9665, 9666

File 2: Added: 1010

File 4: Deleted: 9642

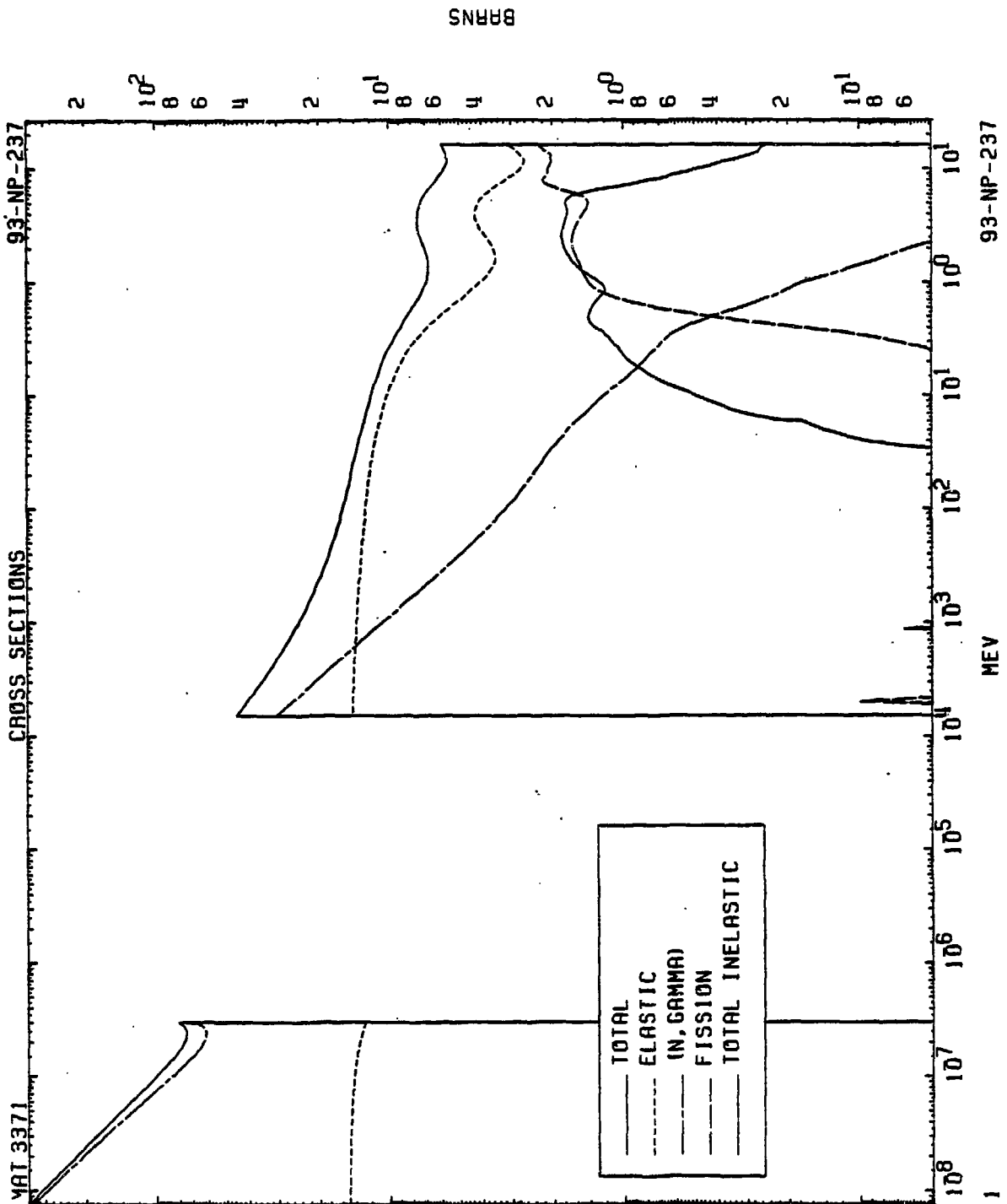
File 5: Added: 1009 B

Status as of May 1982 is documented in IAEA-NDS-12 Rev. 6 (May 1982)

Graphical Plots

The following pages show graphical plots of the cross-sections (not of the resonance parameter or differential data) for File 1 of INDL/A.

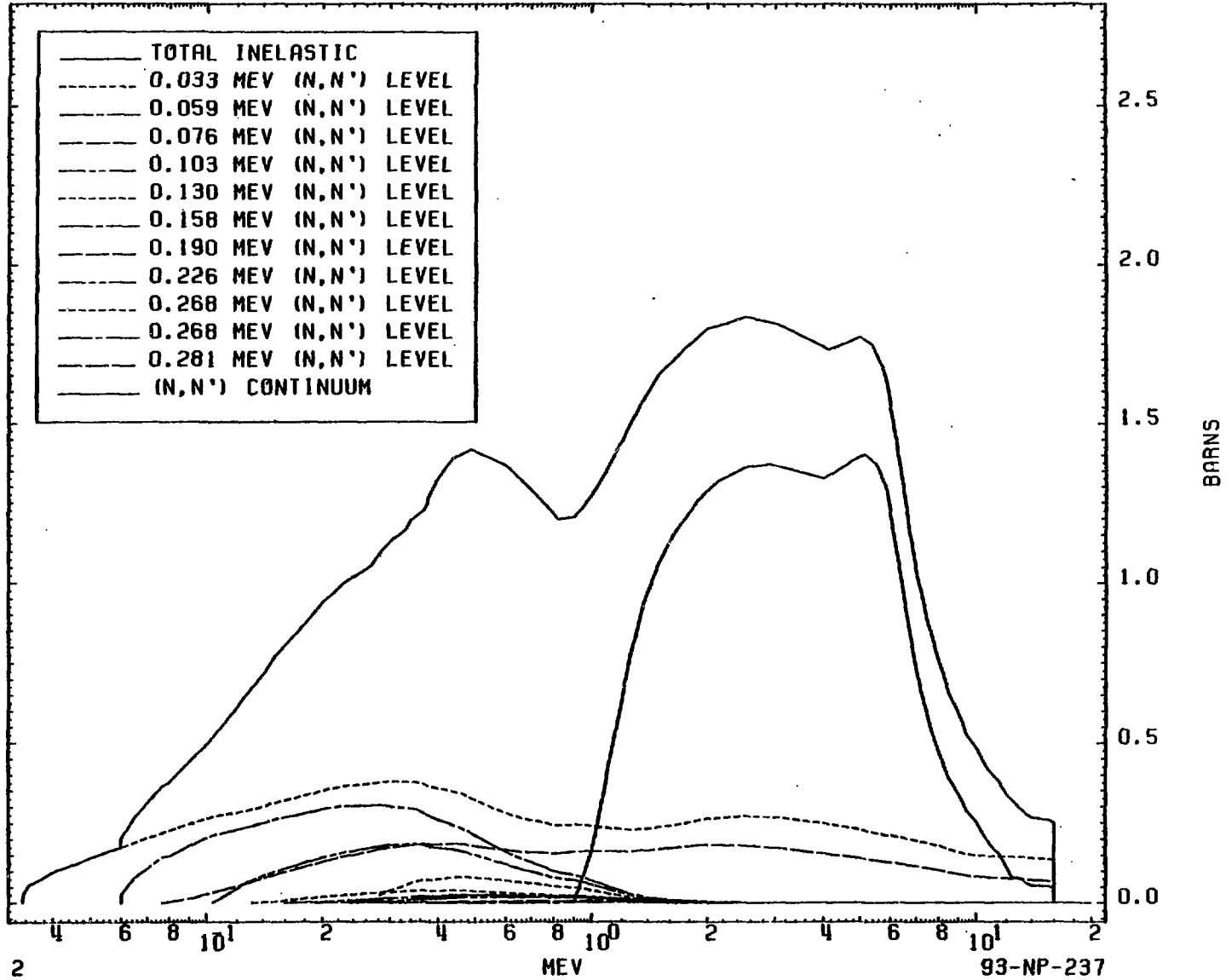
*) Available as microfiche from IAEA-NDS upon request
INDC reports available from IAEA-NDS upon request



MAT 3371

CROSS SECTIONS

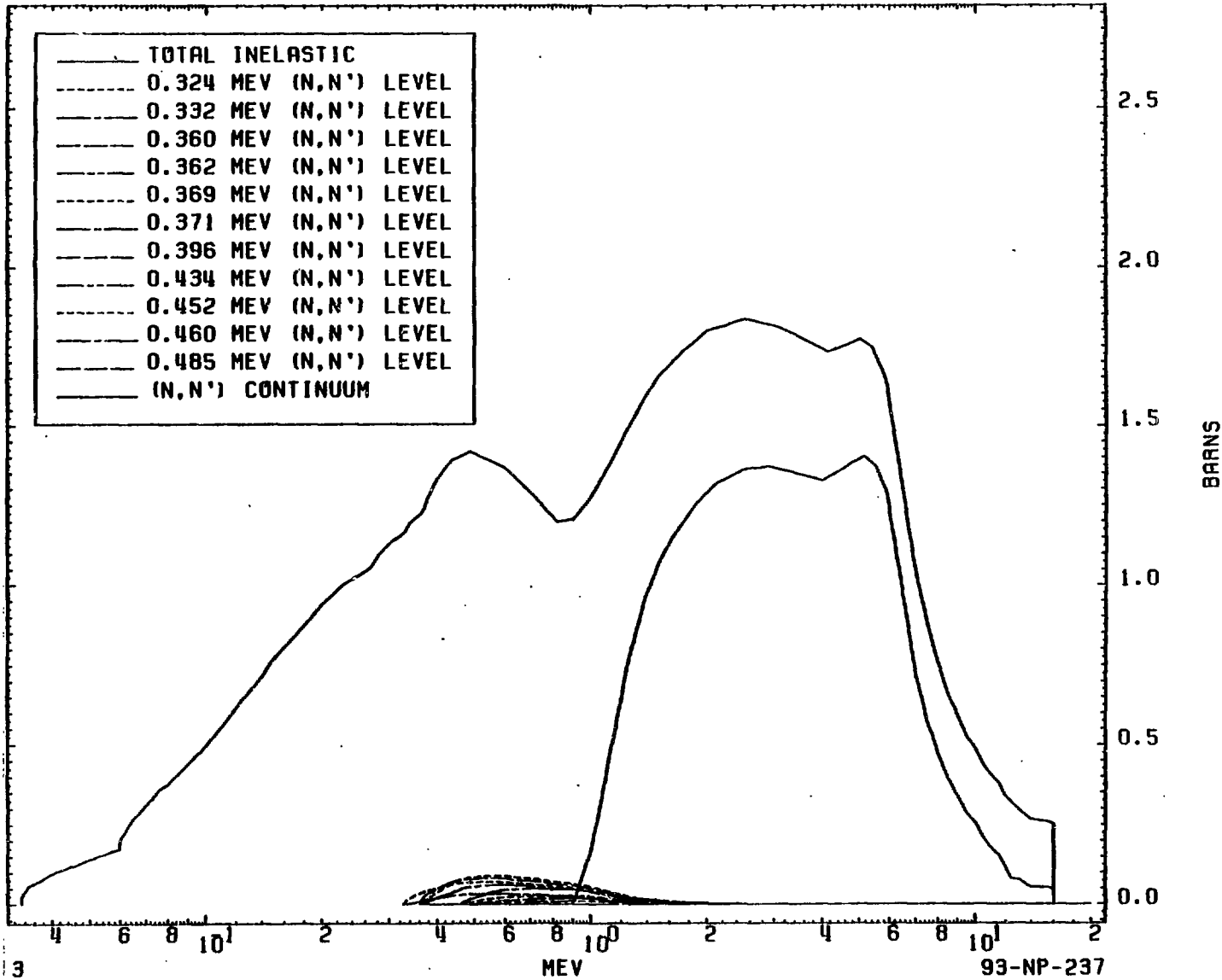
93-NP-237



MAT 3371

CROSS SECTIONS

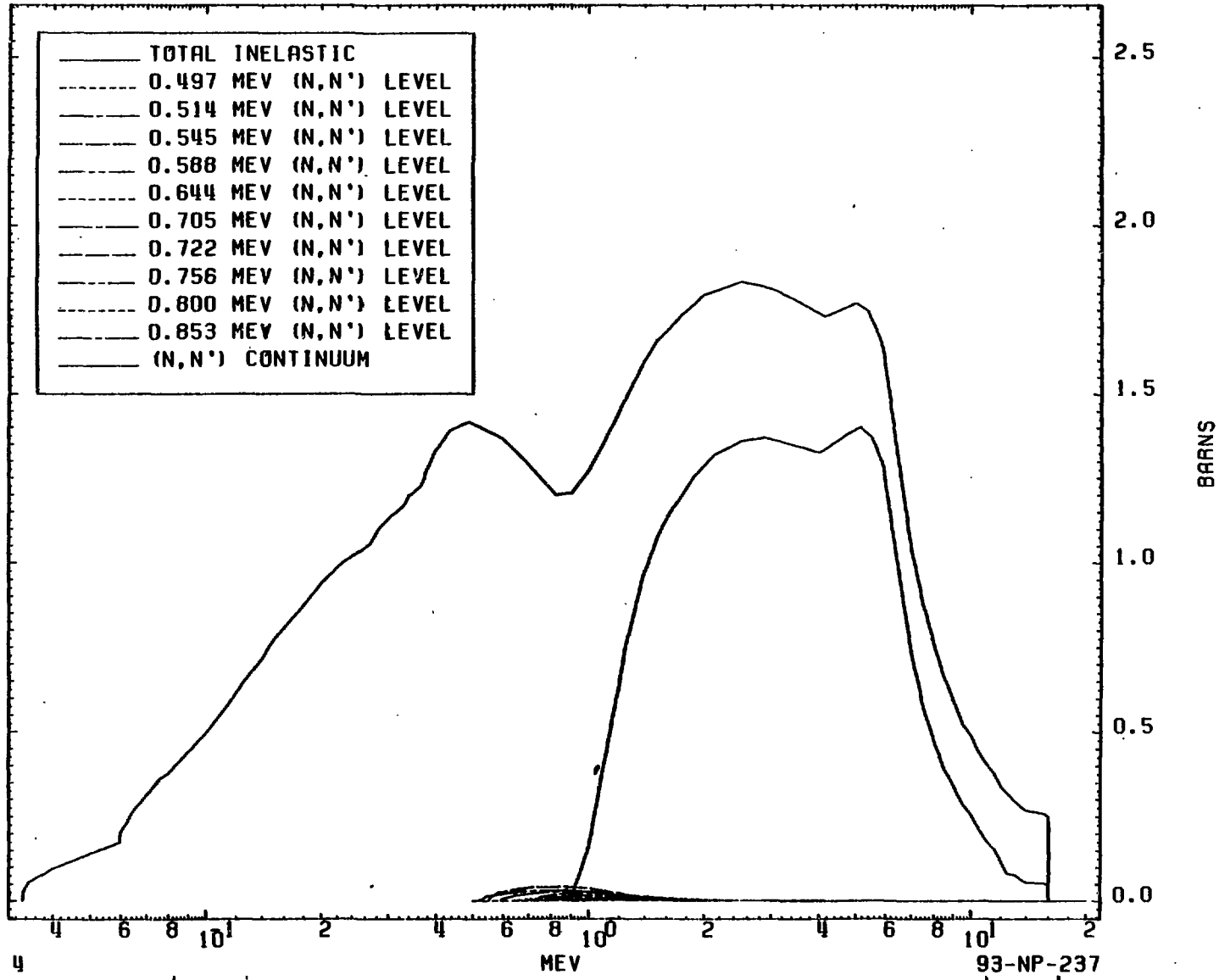
93-NP-237



MAT 3371

CROSS SECTIONS

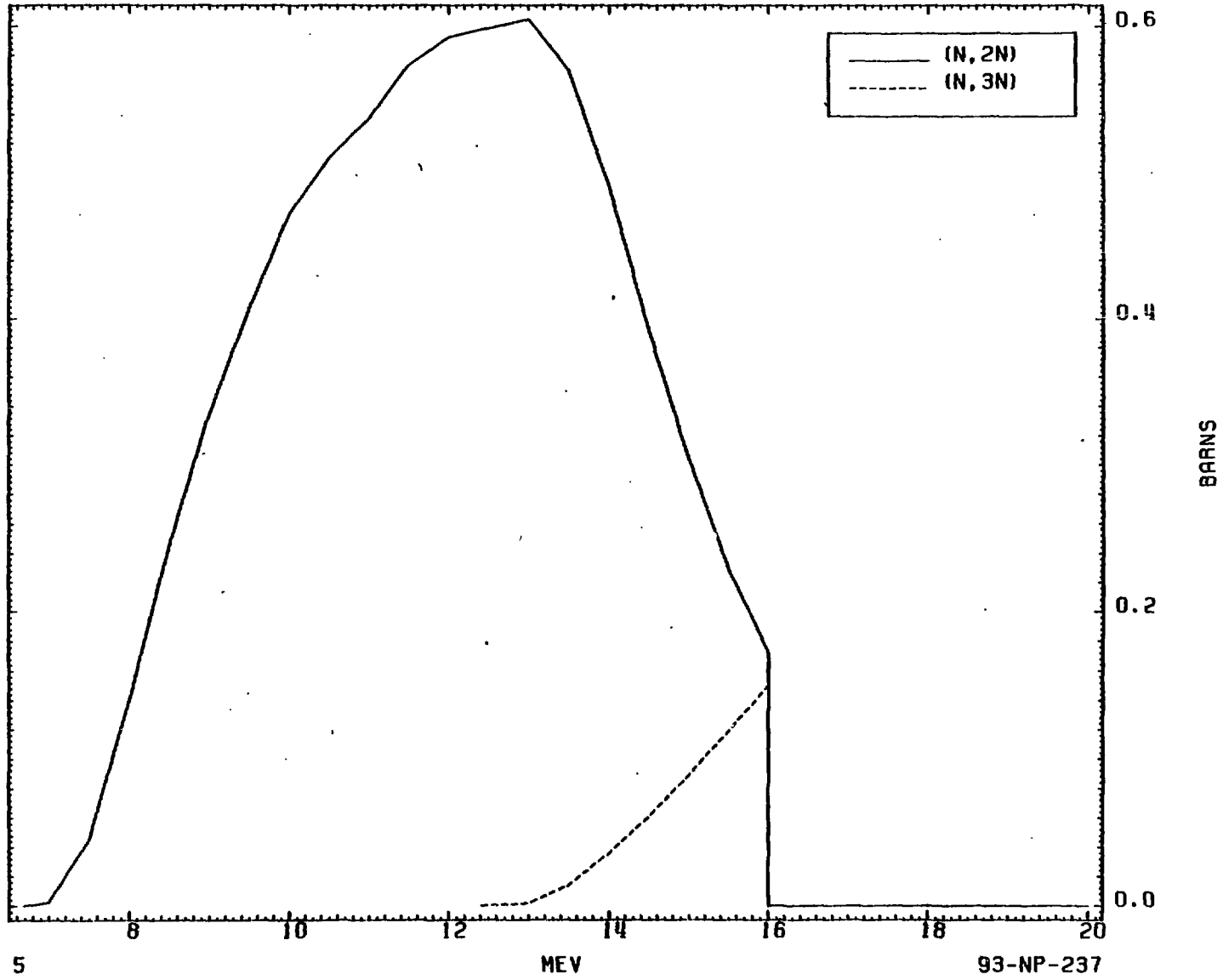
93-NP-237



MAT 3371

CROSS SECTIONS

93-NP-237

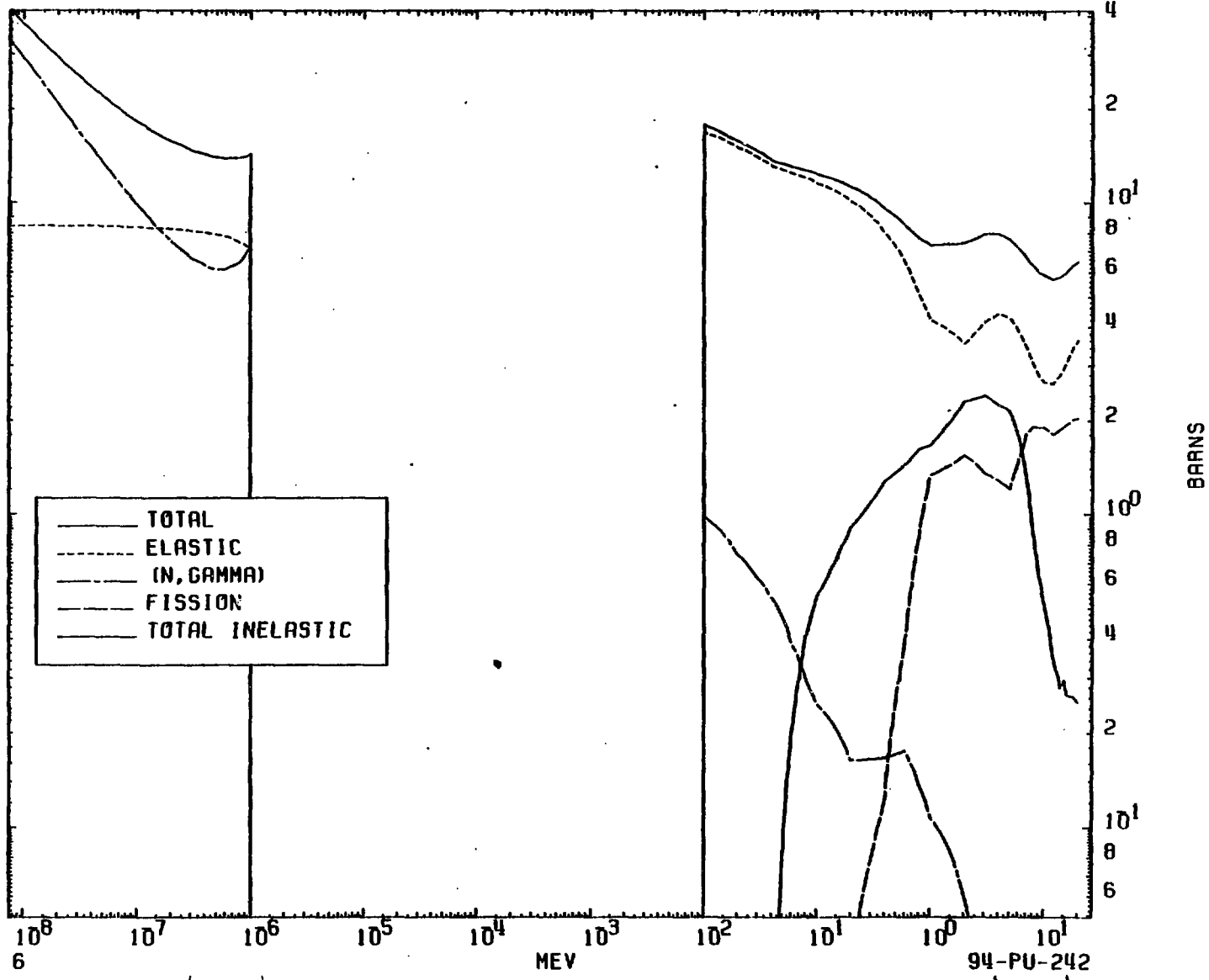


93-NP-237

MAT 5161

CROSS SECTIONS

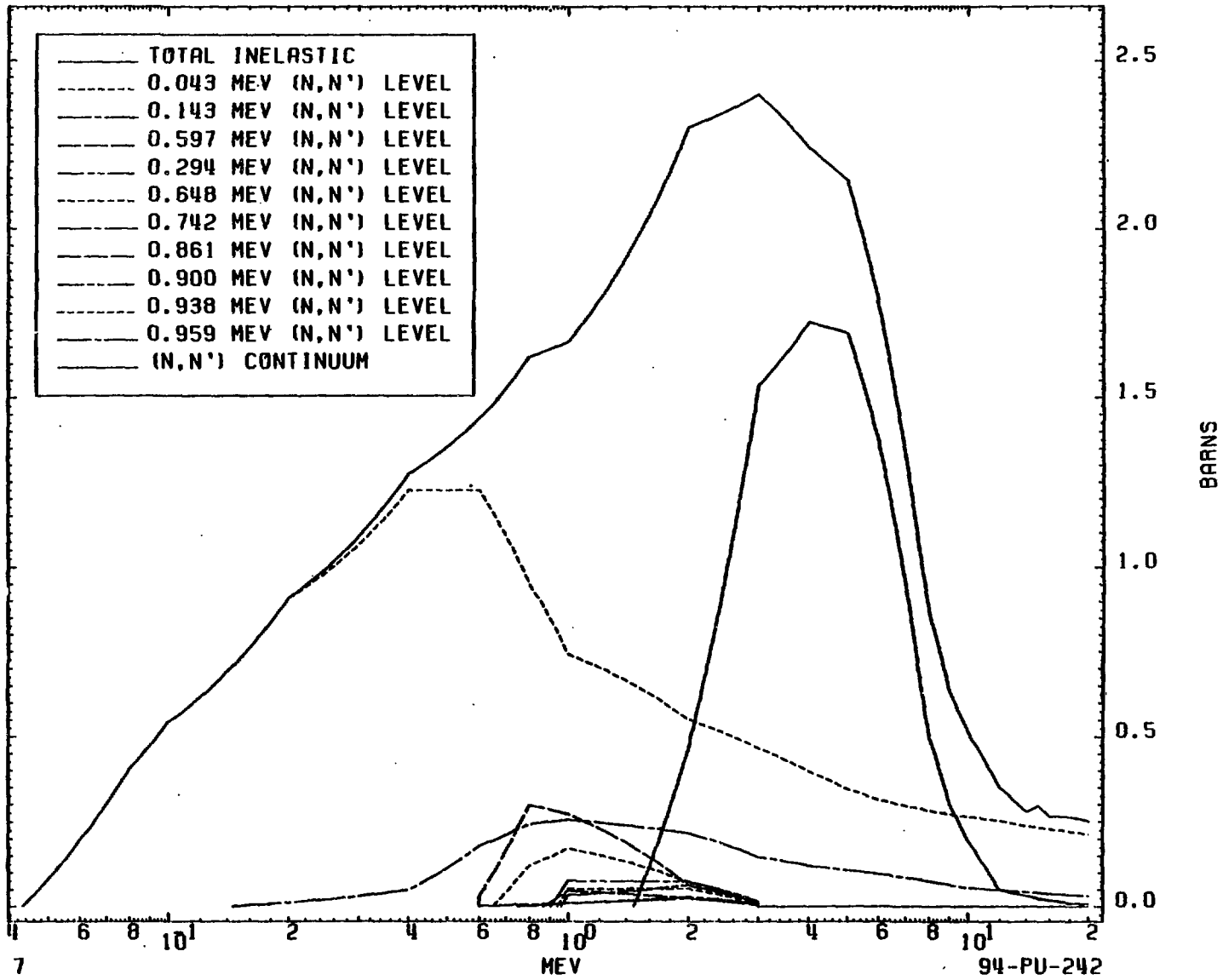
94-PU-242



MAT 5161

CROSS SECTIONS

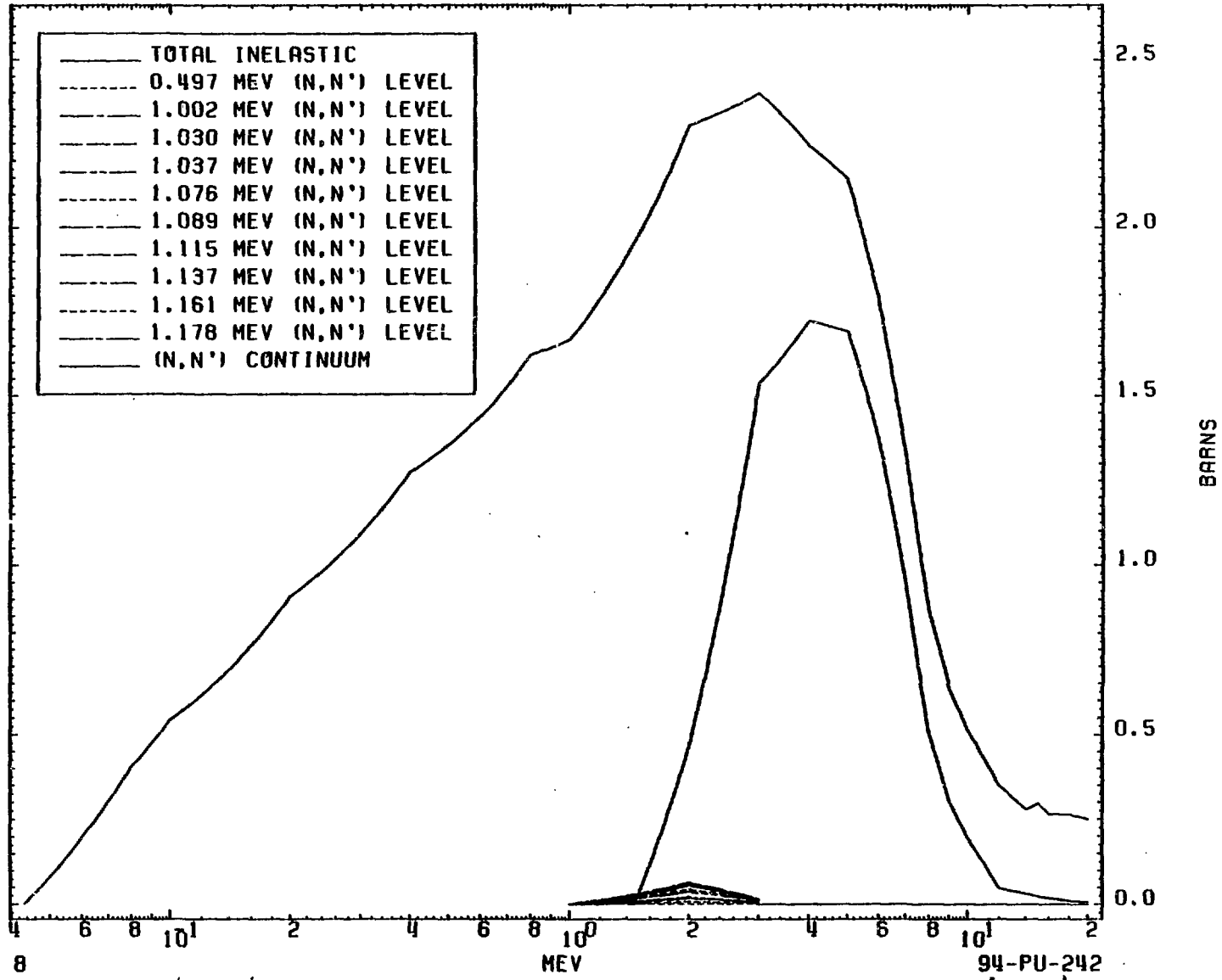
94-PU-242



MAT 5161

CROSS SECTIONS

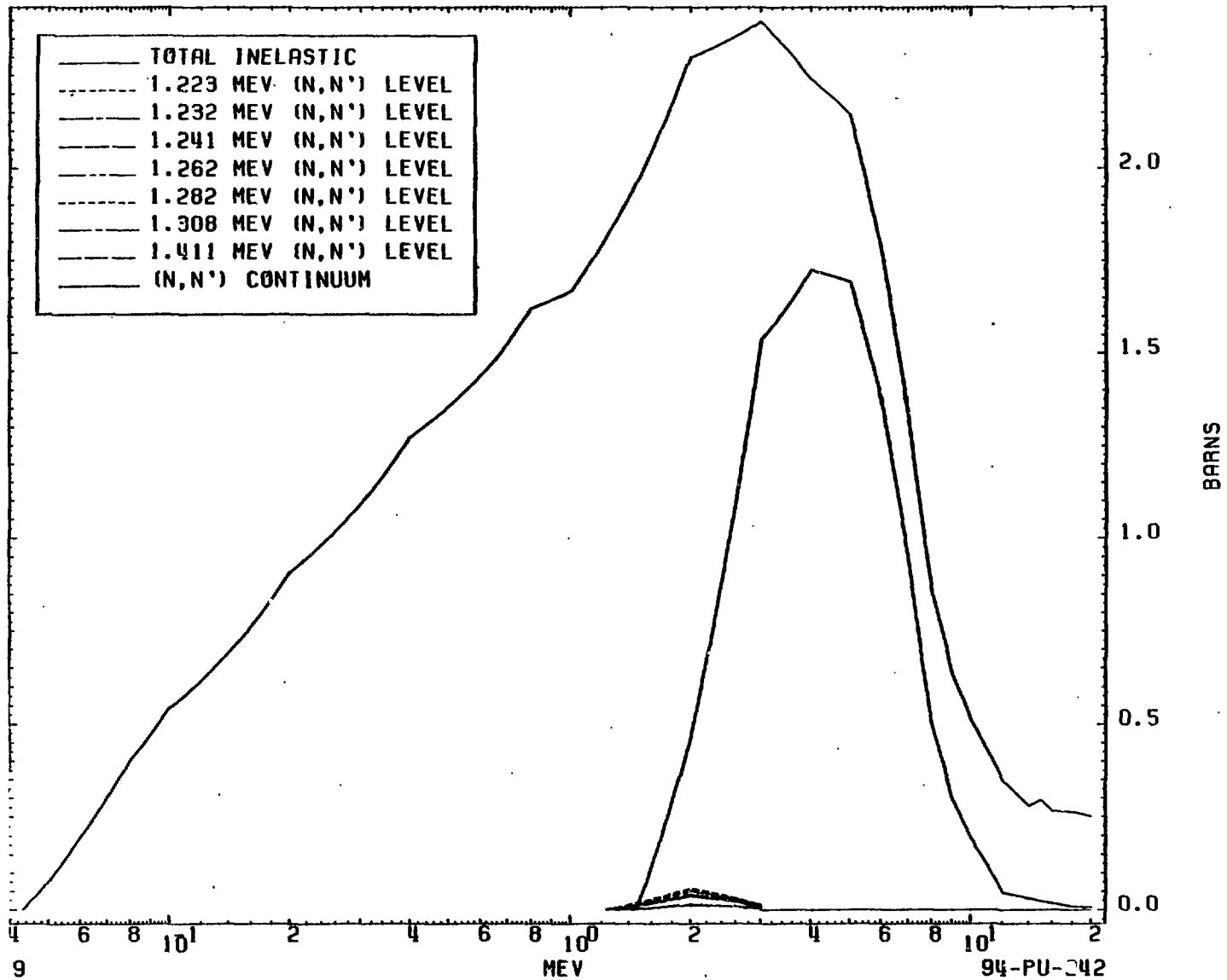
94-PU-242



MAT 5161

CROSS SECTIONS

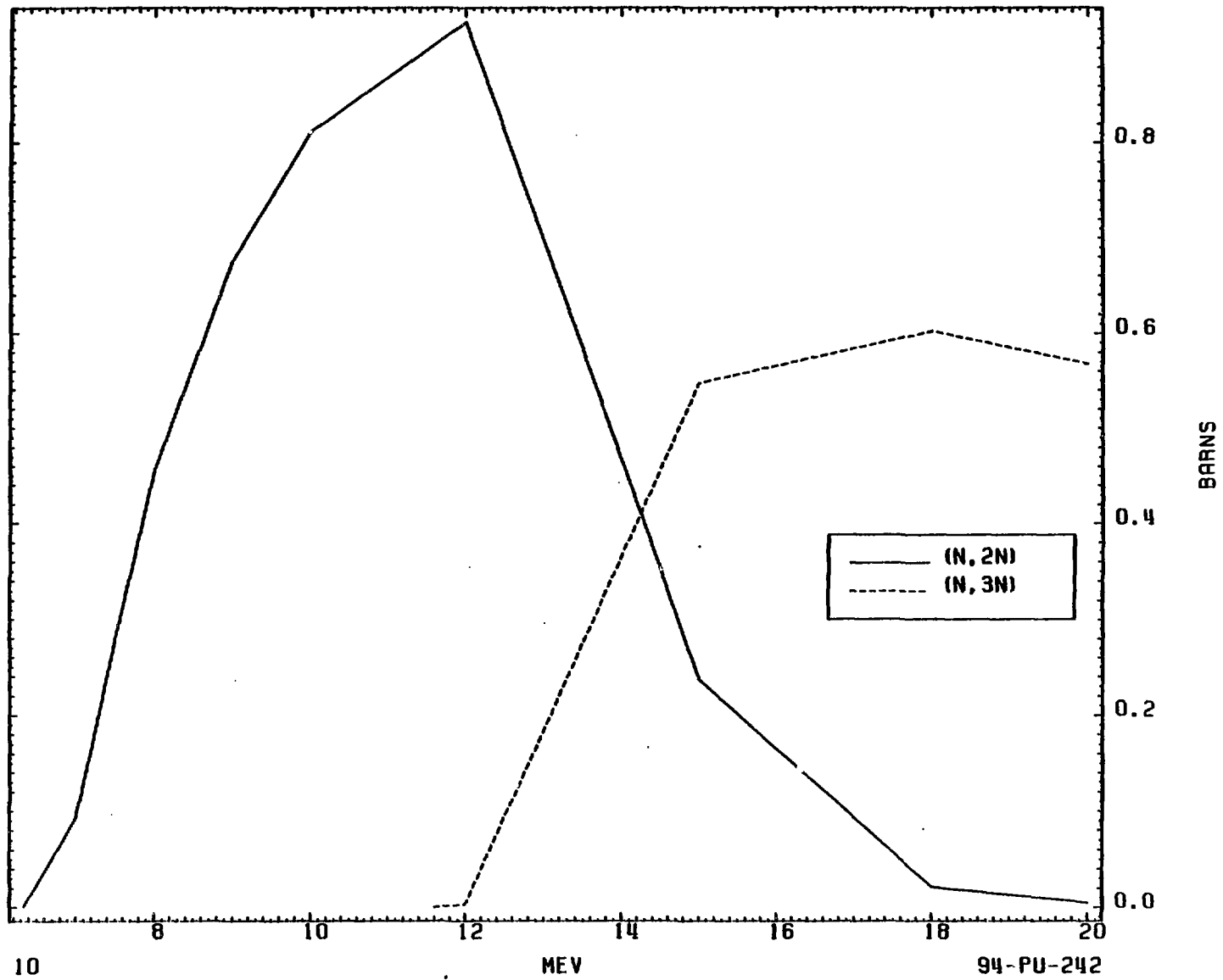
94-PU-242



MAT 5161

CROSS SECTIONS

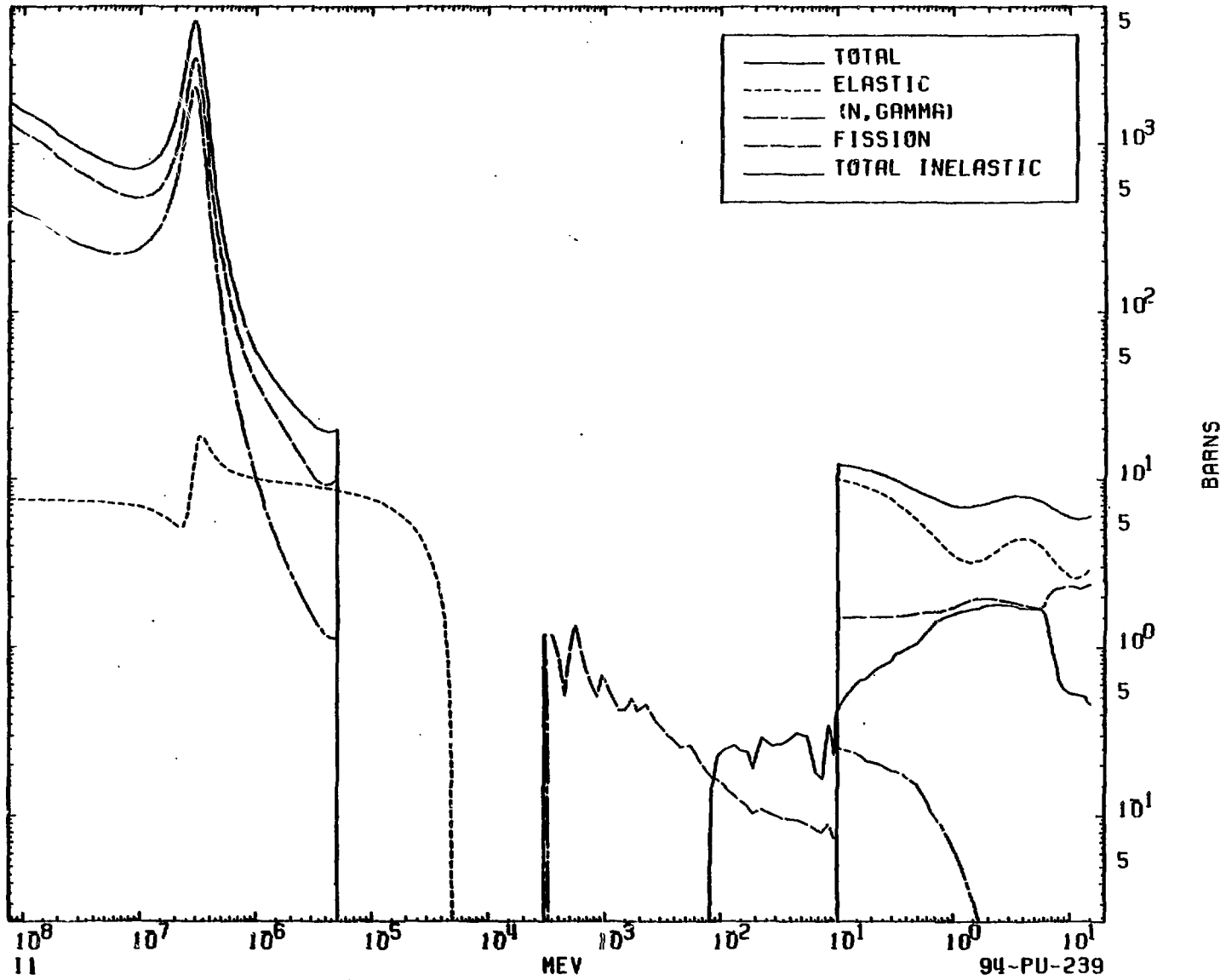
94-PU-242

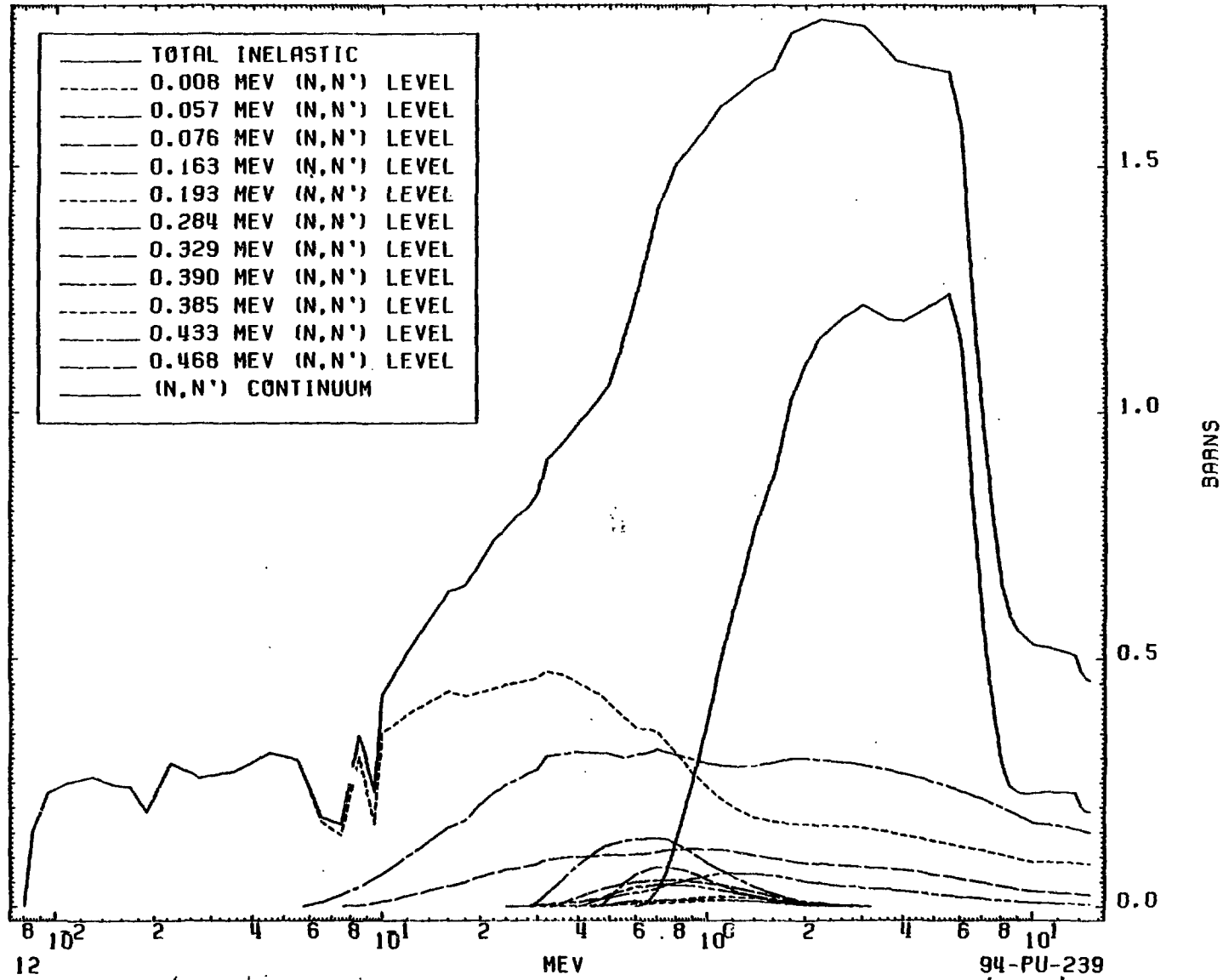


MAT 9421

CROSS SECTIONS

94-PU-239





12

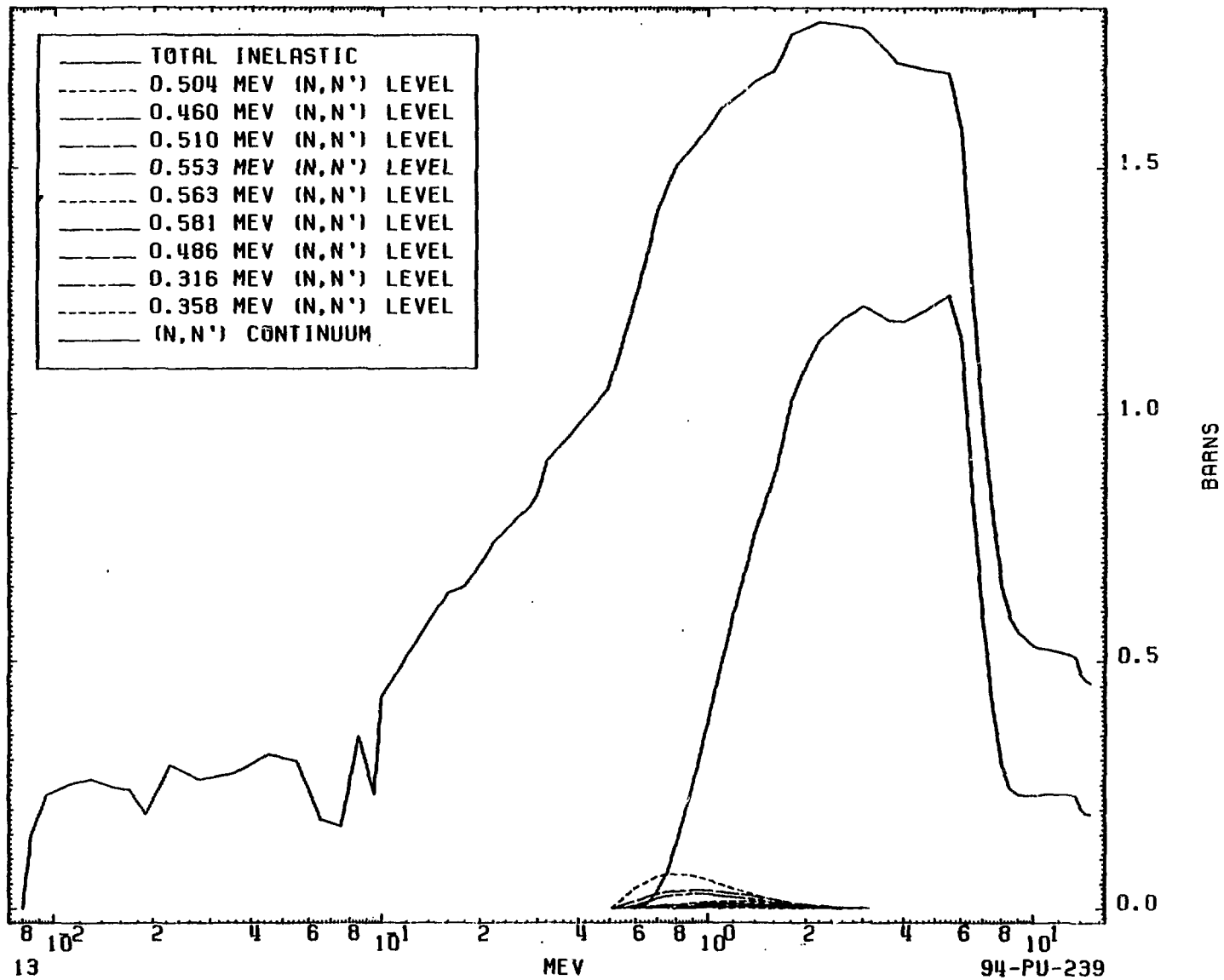
MEV

94-PU-239

MAT 9421

CROSS SECTIONS

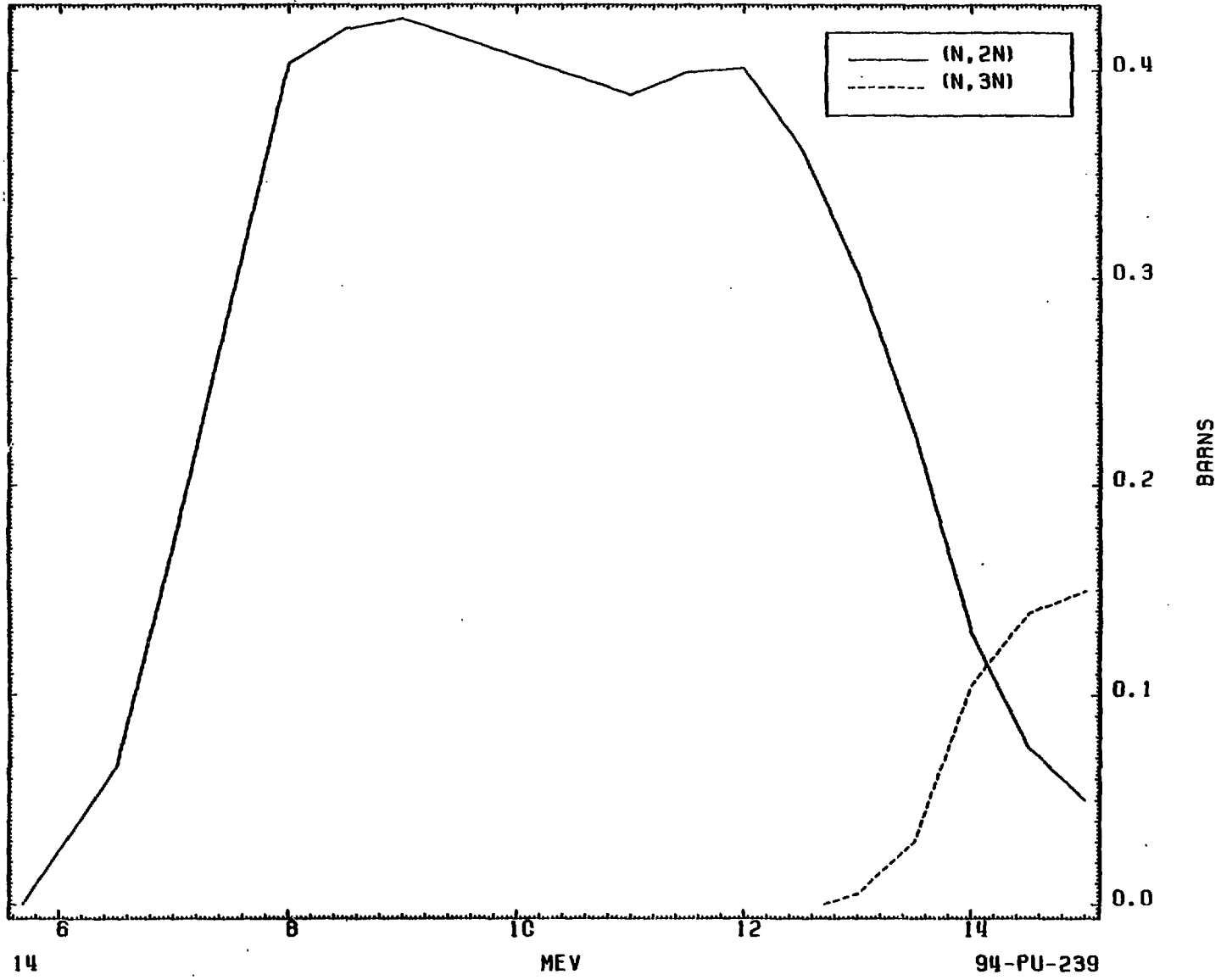
94-PU-239



MAT 9421

CROSS SECTIONS

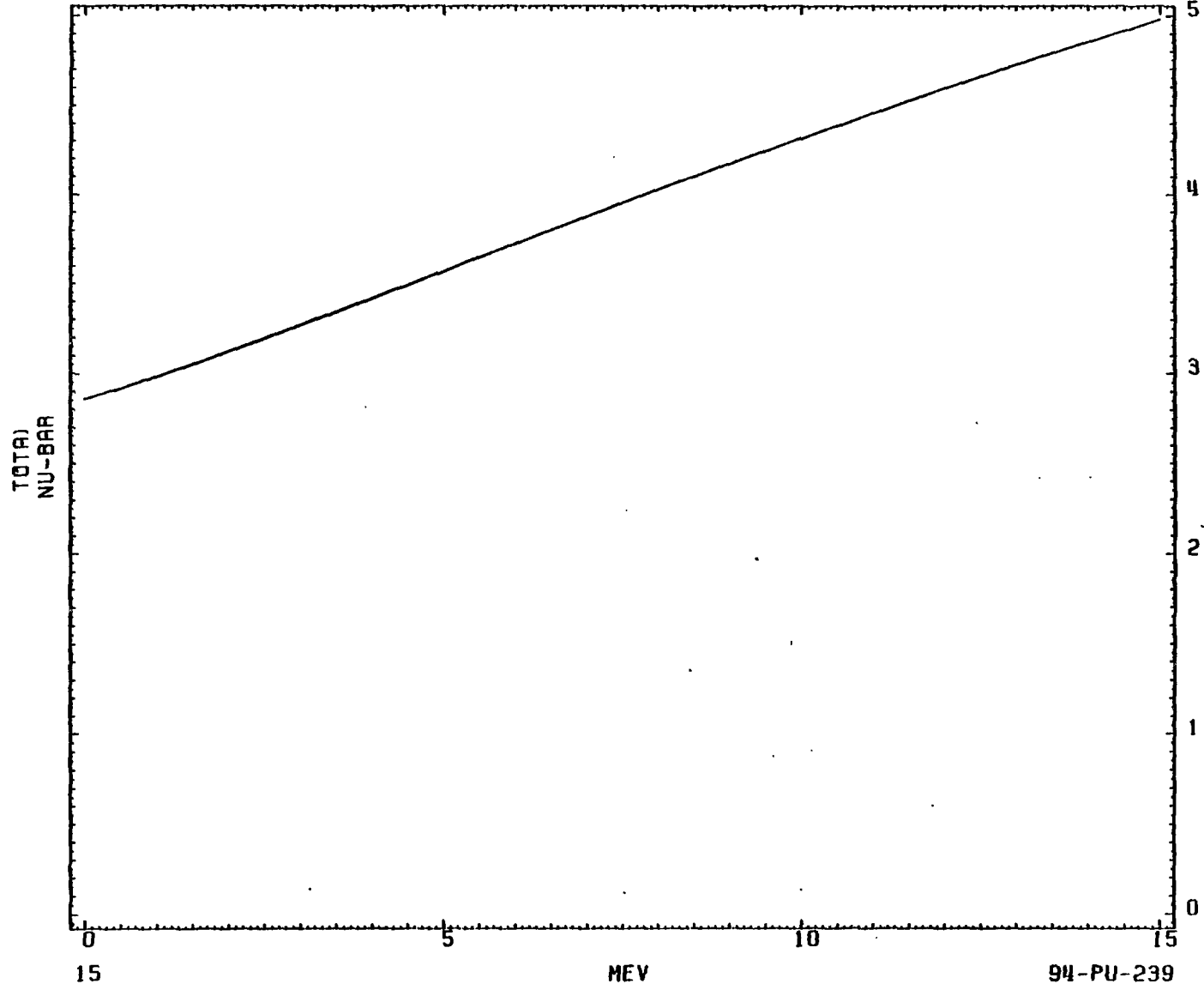
94-PU-239



MAT 9421

PARAMETERS

94-PU-239



15

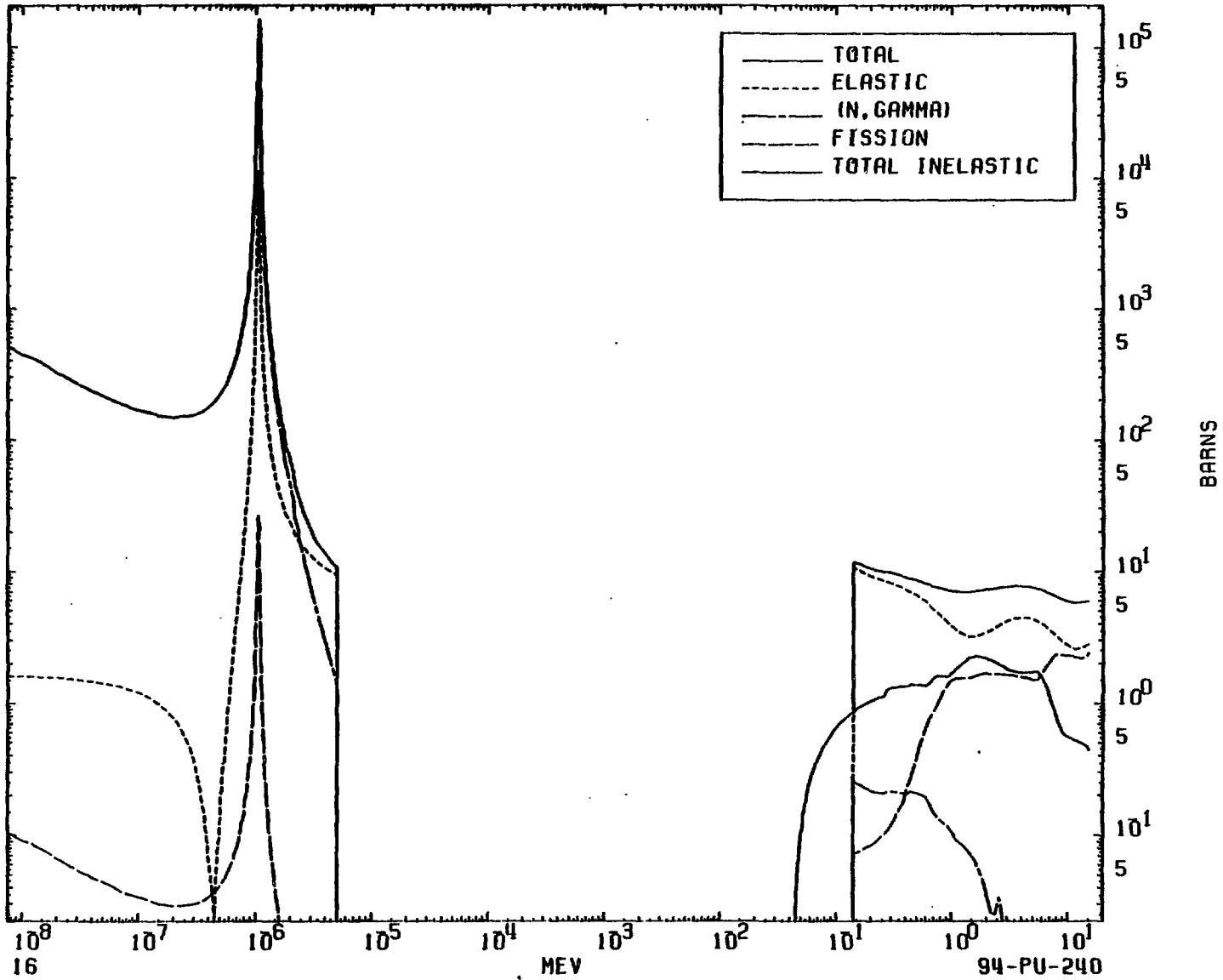
MEV

94-PU-239

MAT 9431

CROSS SECTIONS

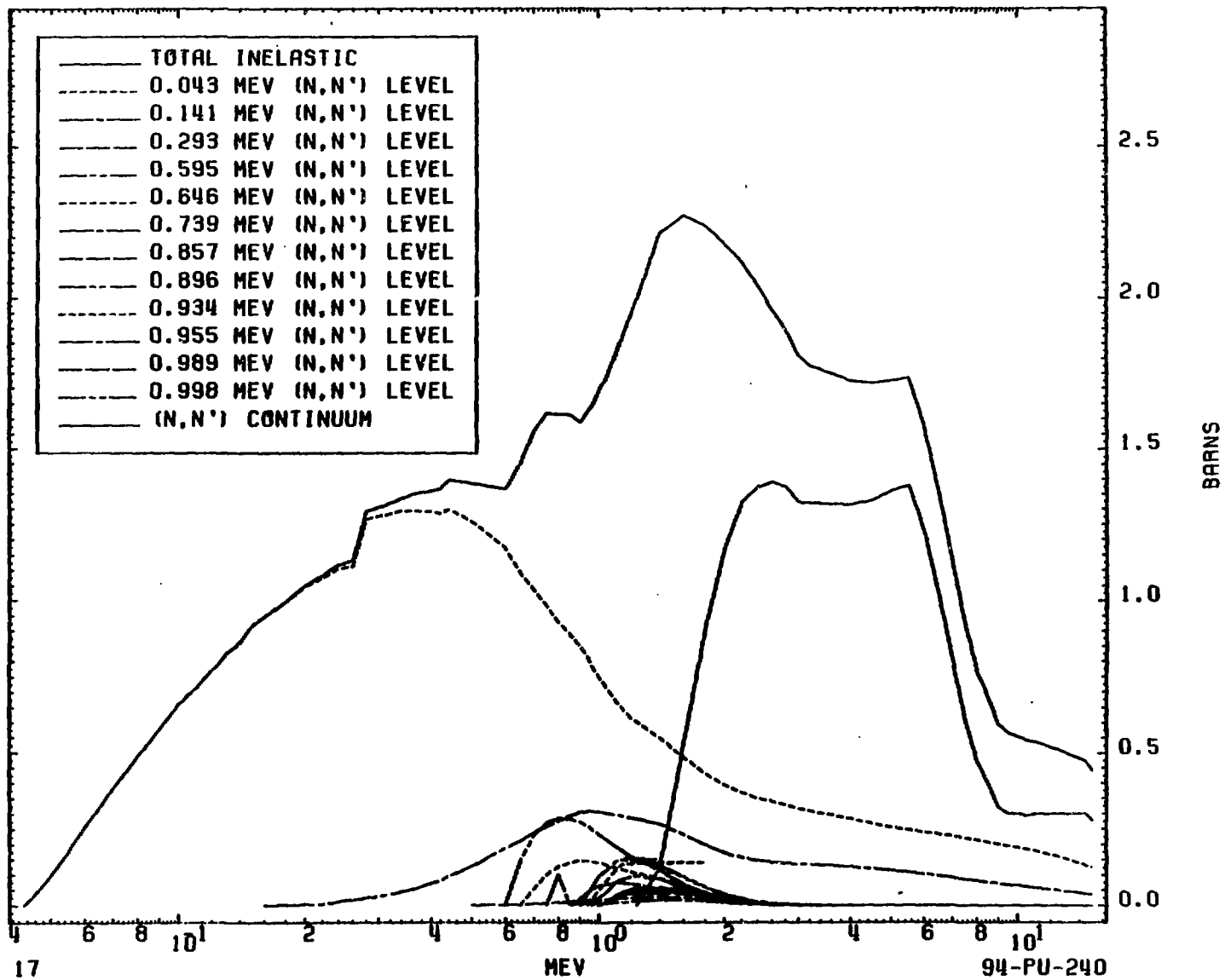
94-PU-240



MAT 9431

CROSS SECTIONS

94-PU-240



17

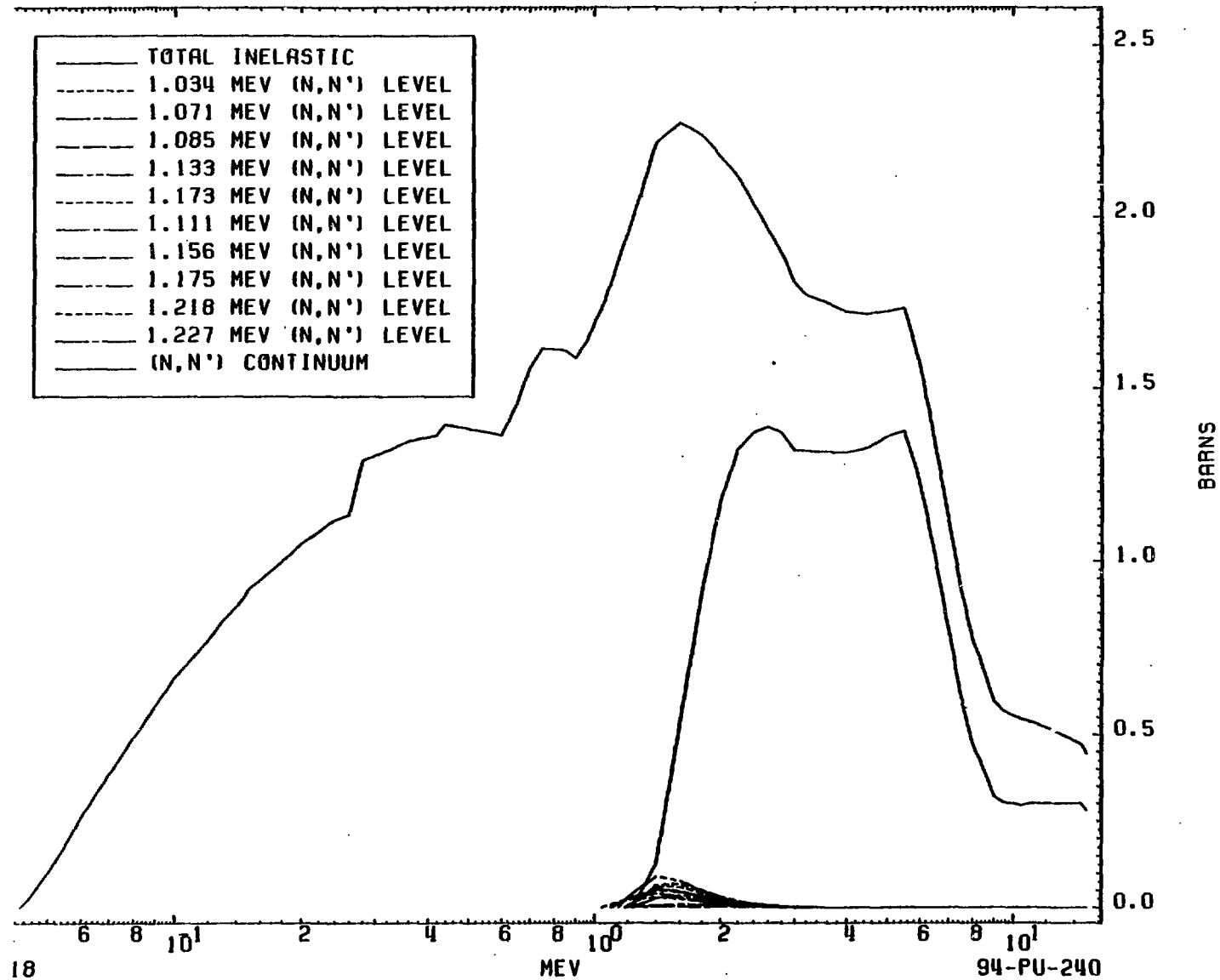
MEV

94-PU-240

MAT 9431

CROSS SECTIONS

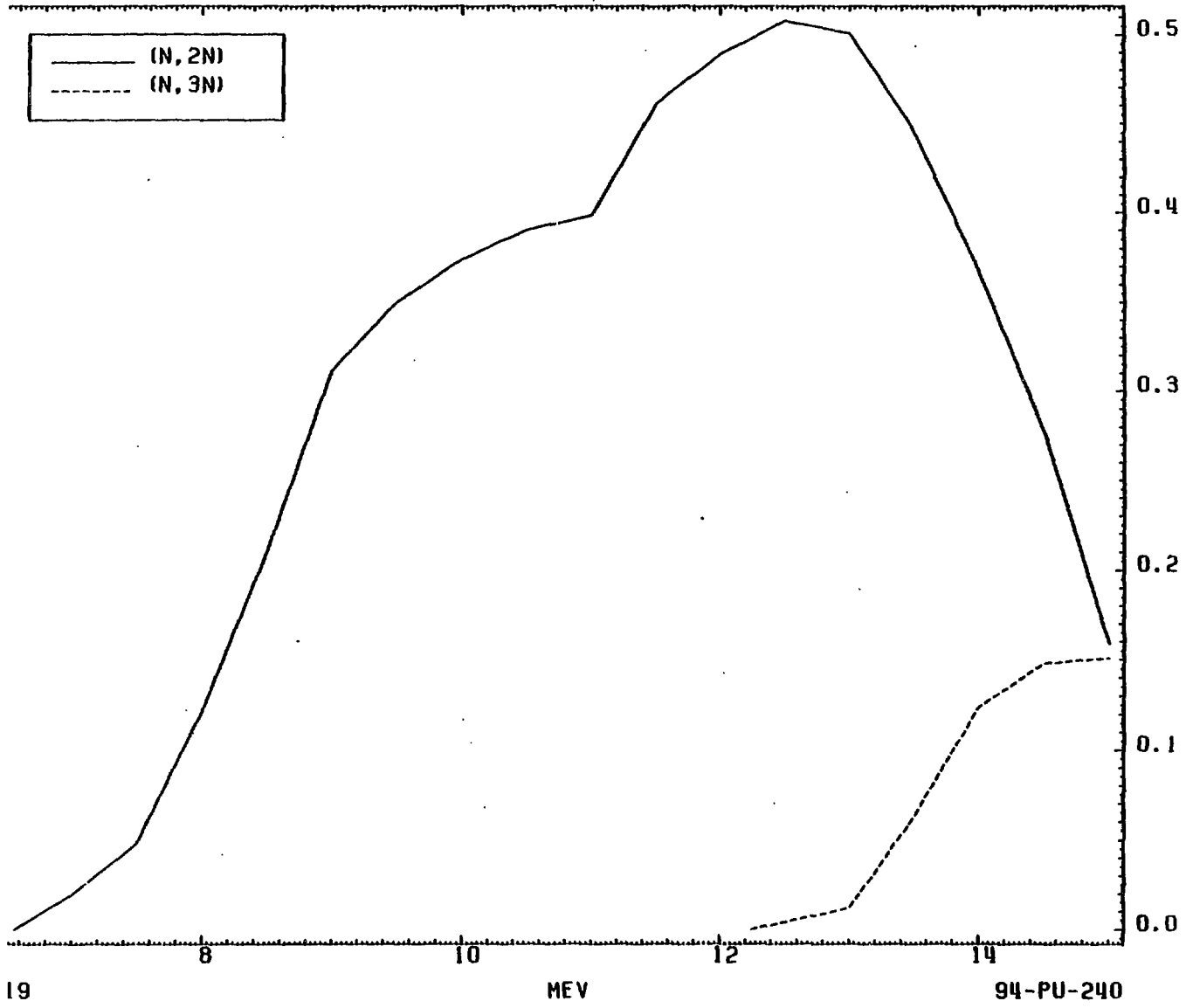
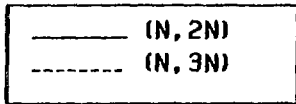
94-PU-240

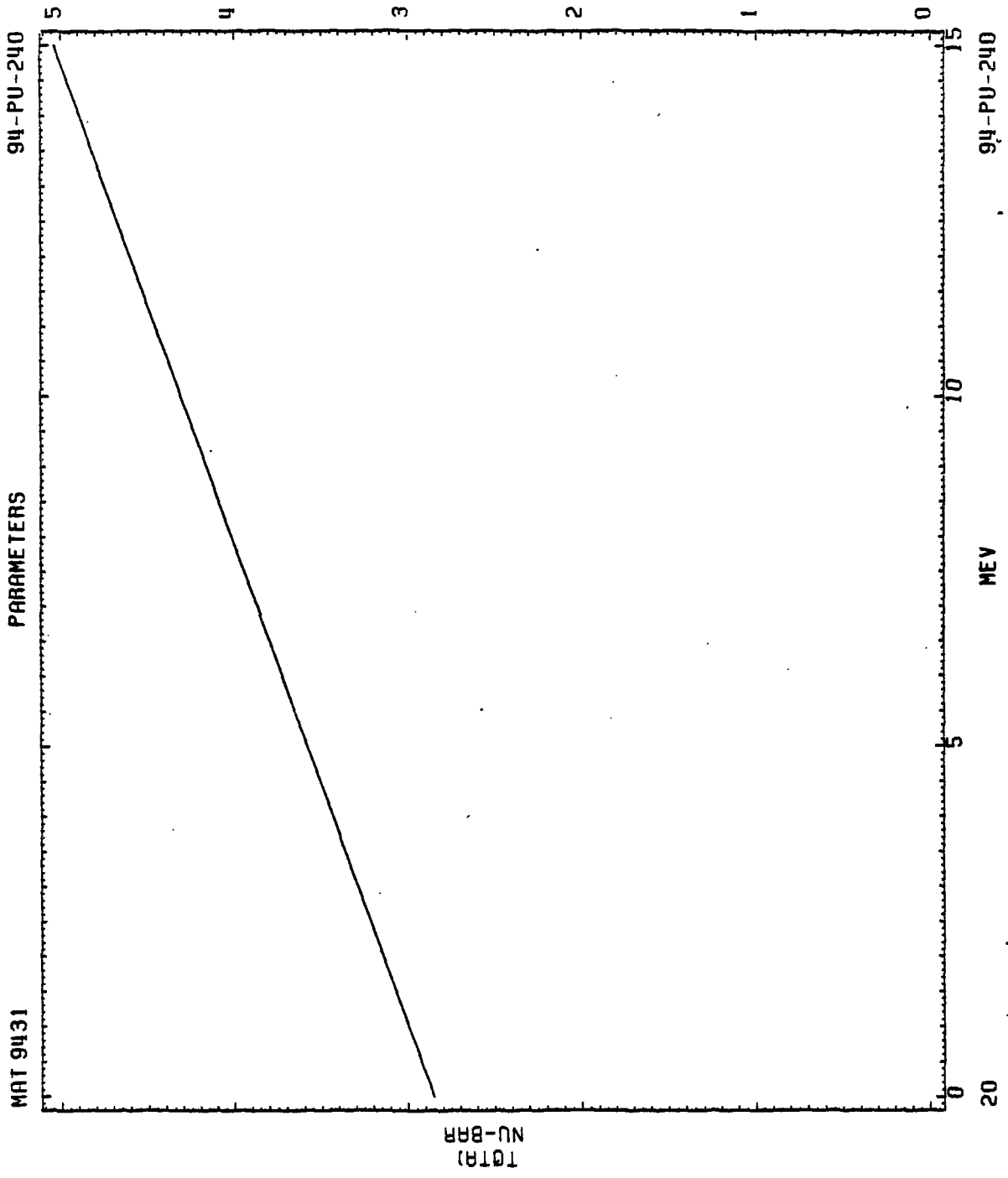


1AT 9431

CROSS SECTIONS

94-PU-240

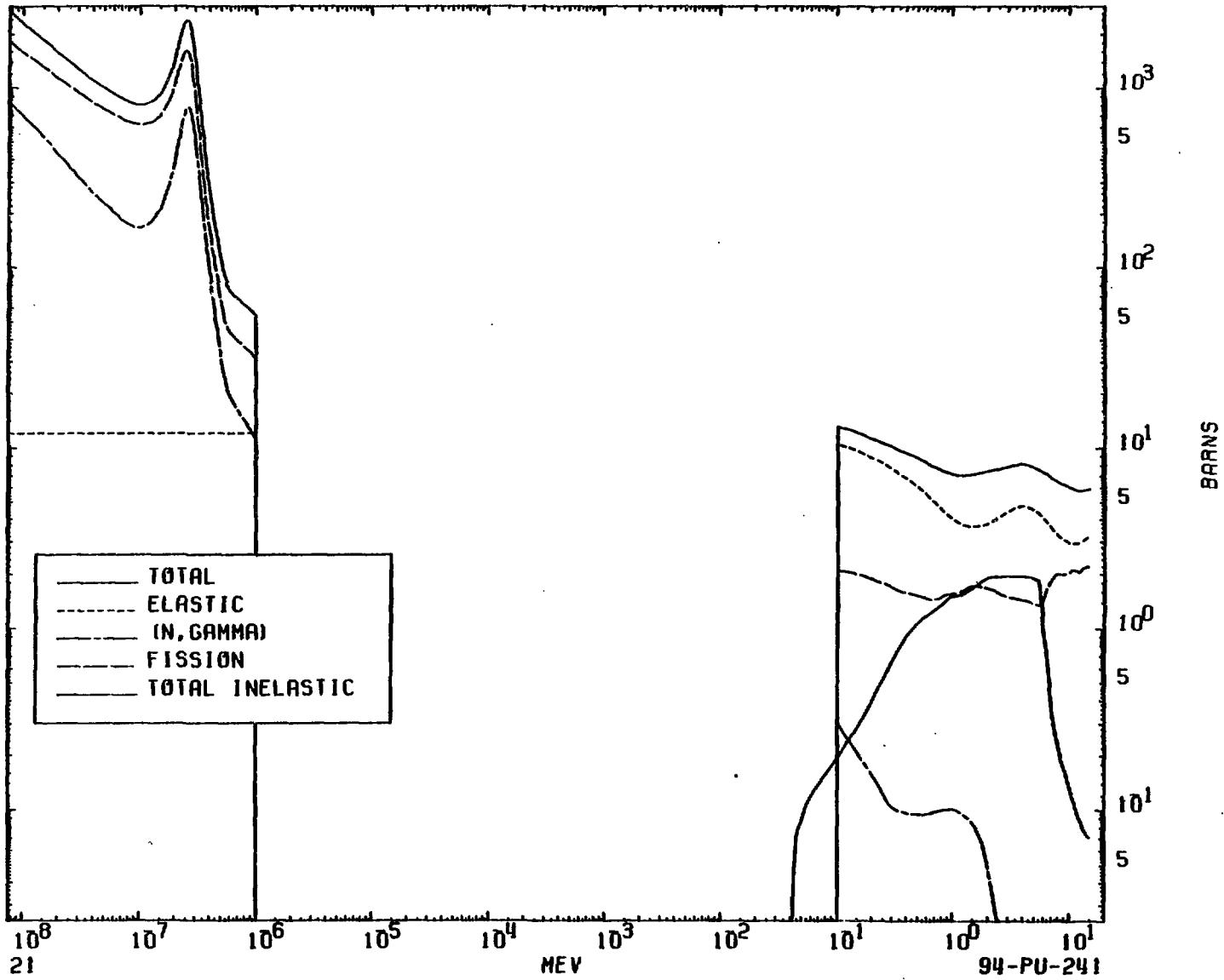




MAT 9440

CROSS SECTIONS

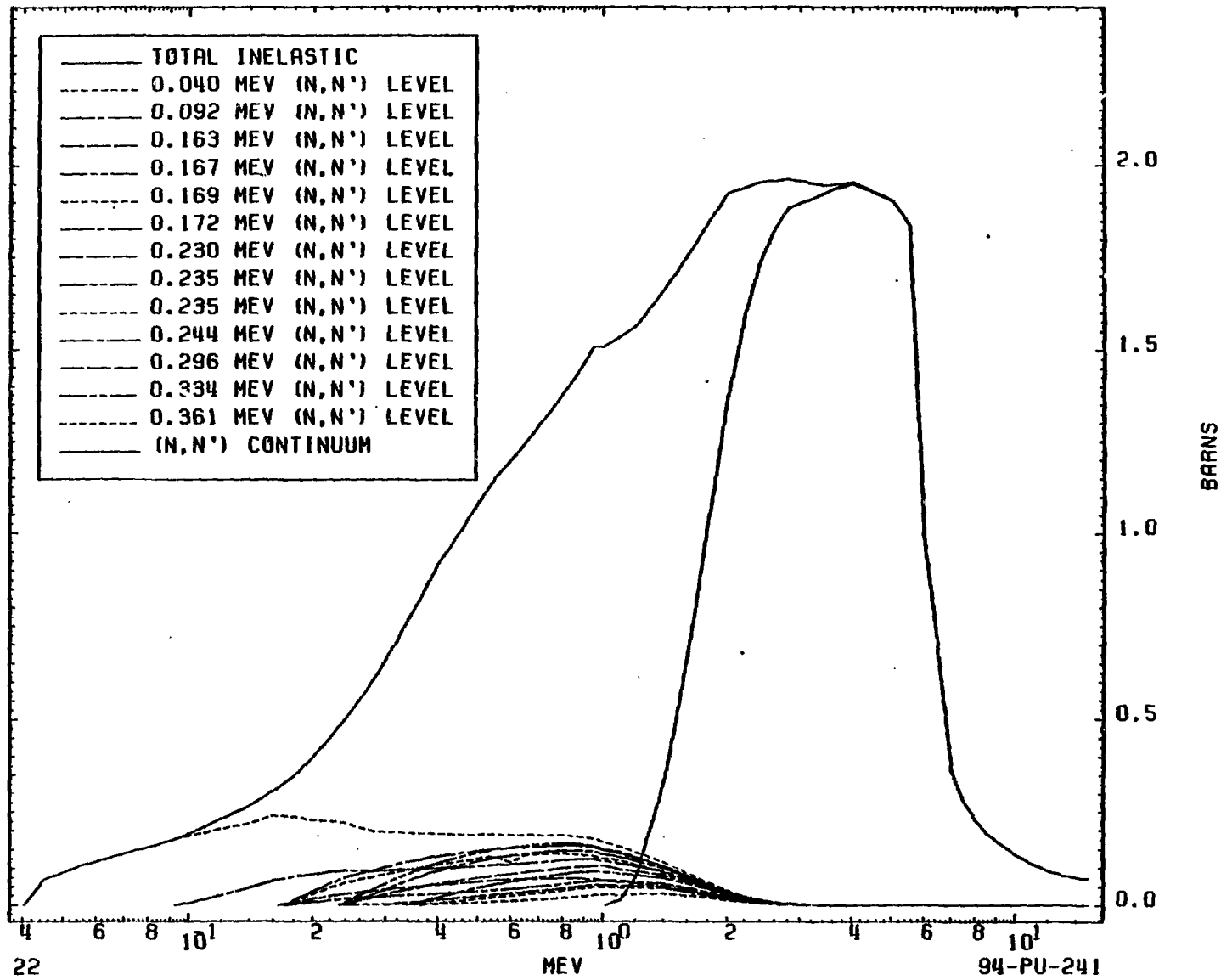
94-PU-241



MAT 9440

CROSS SECTIONS

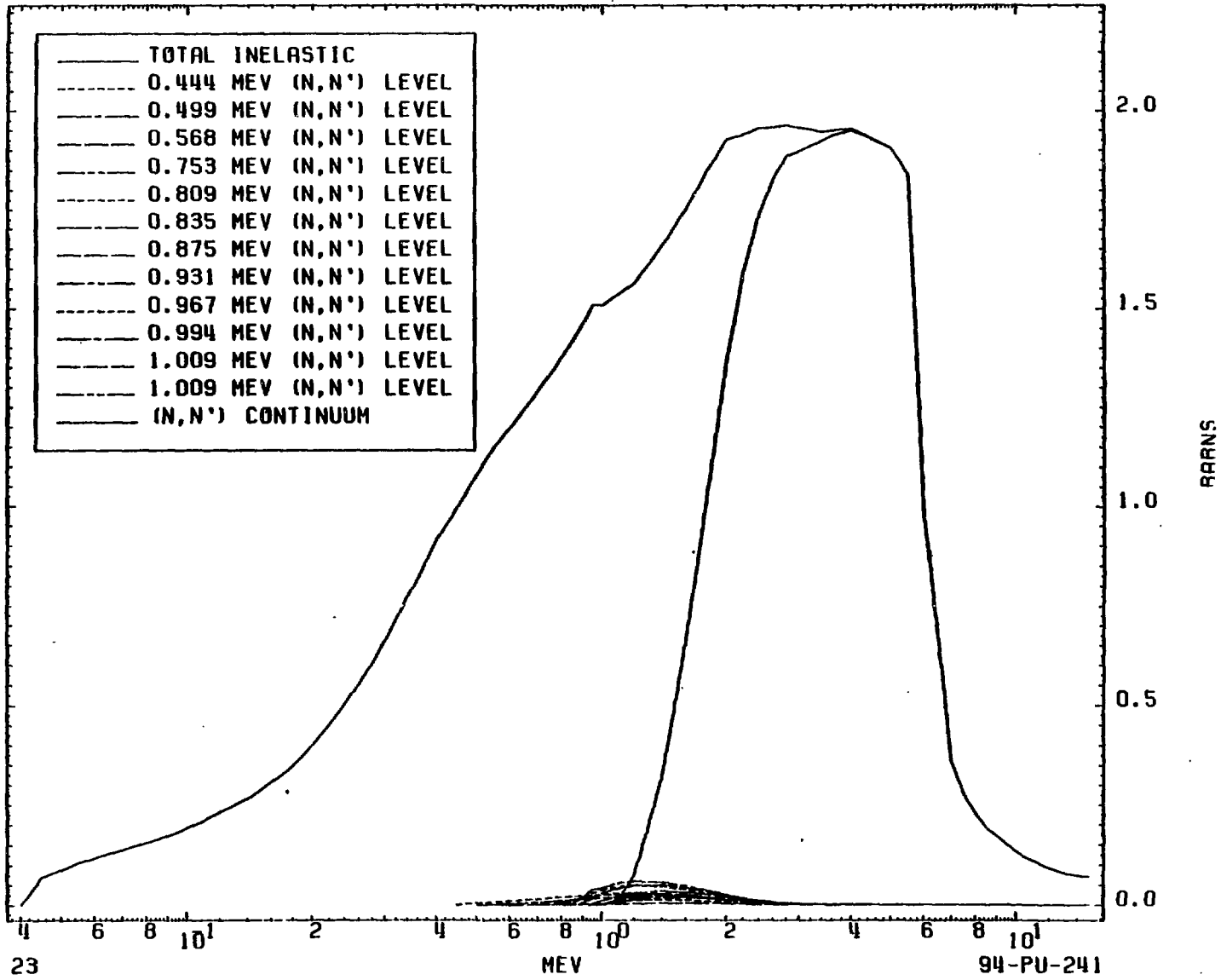
94-PU-241

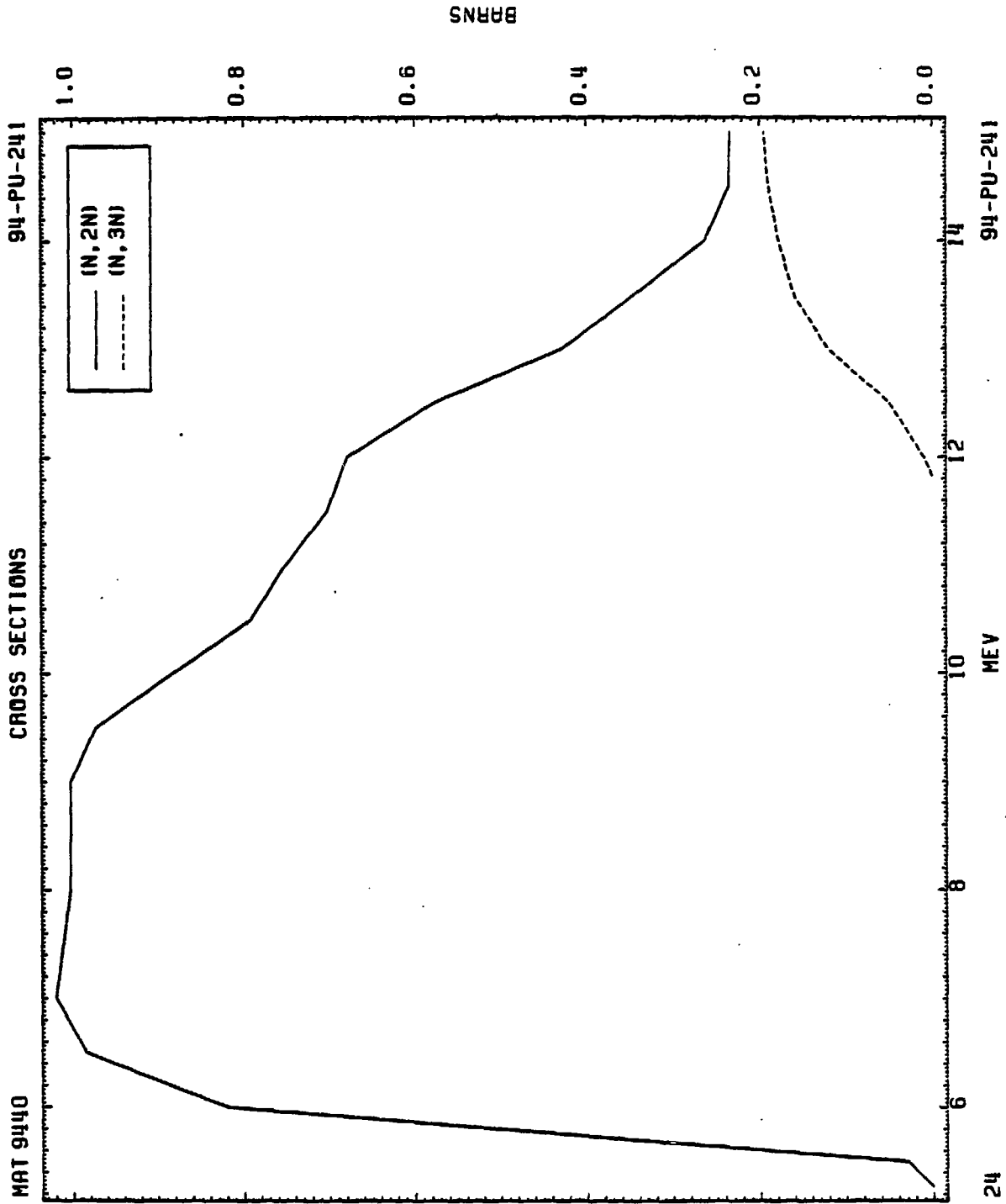


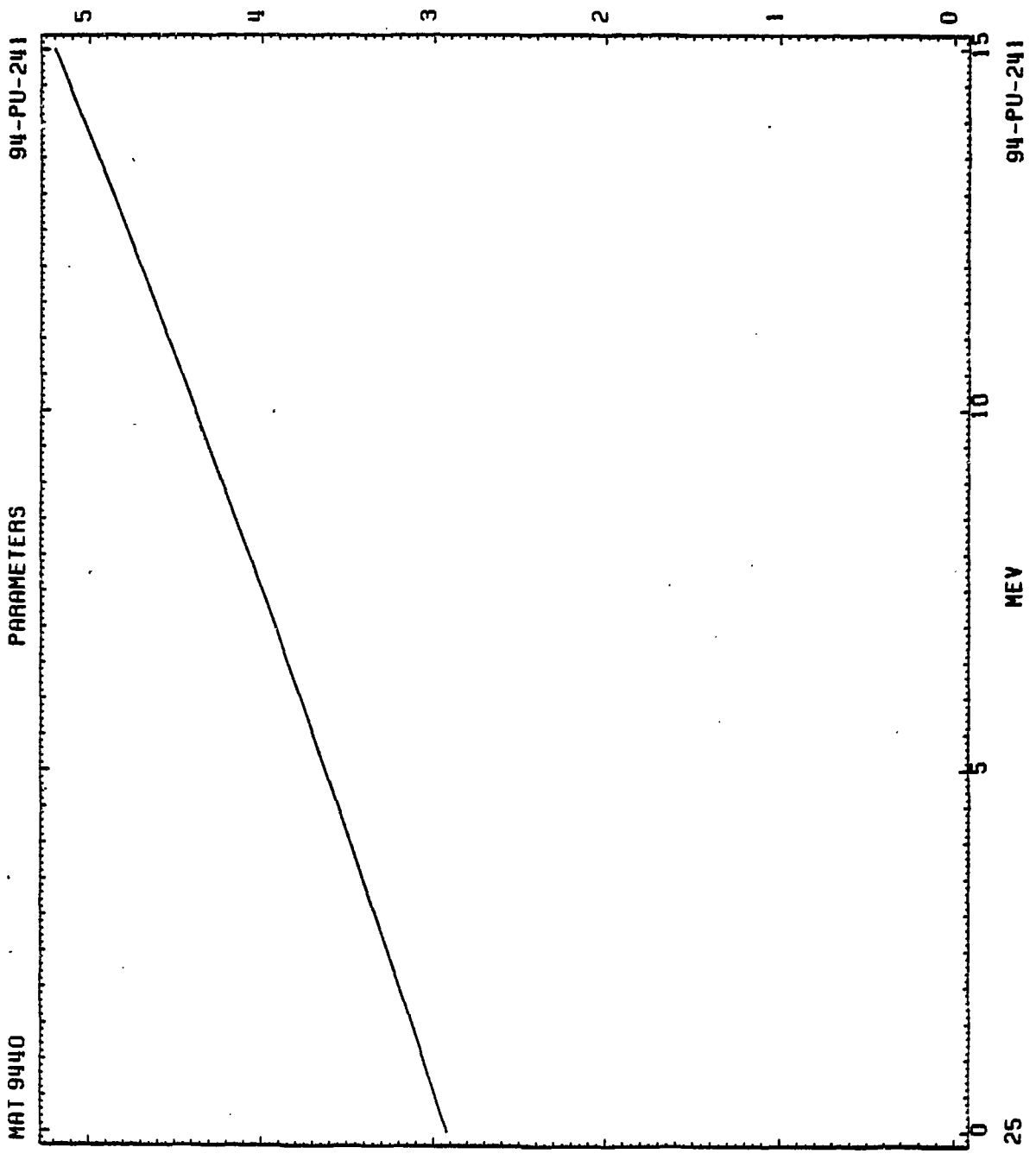
MAT 9440

CROSS SECTIONS

94-PU-241



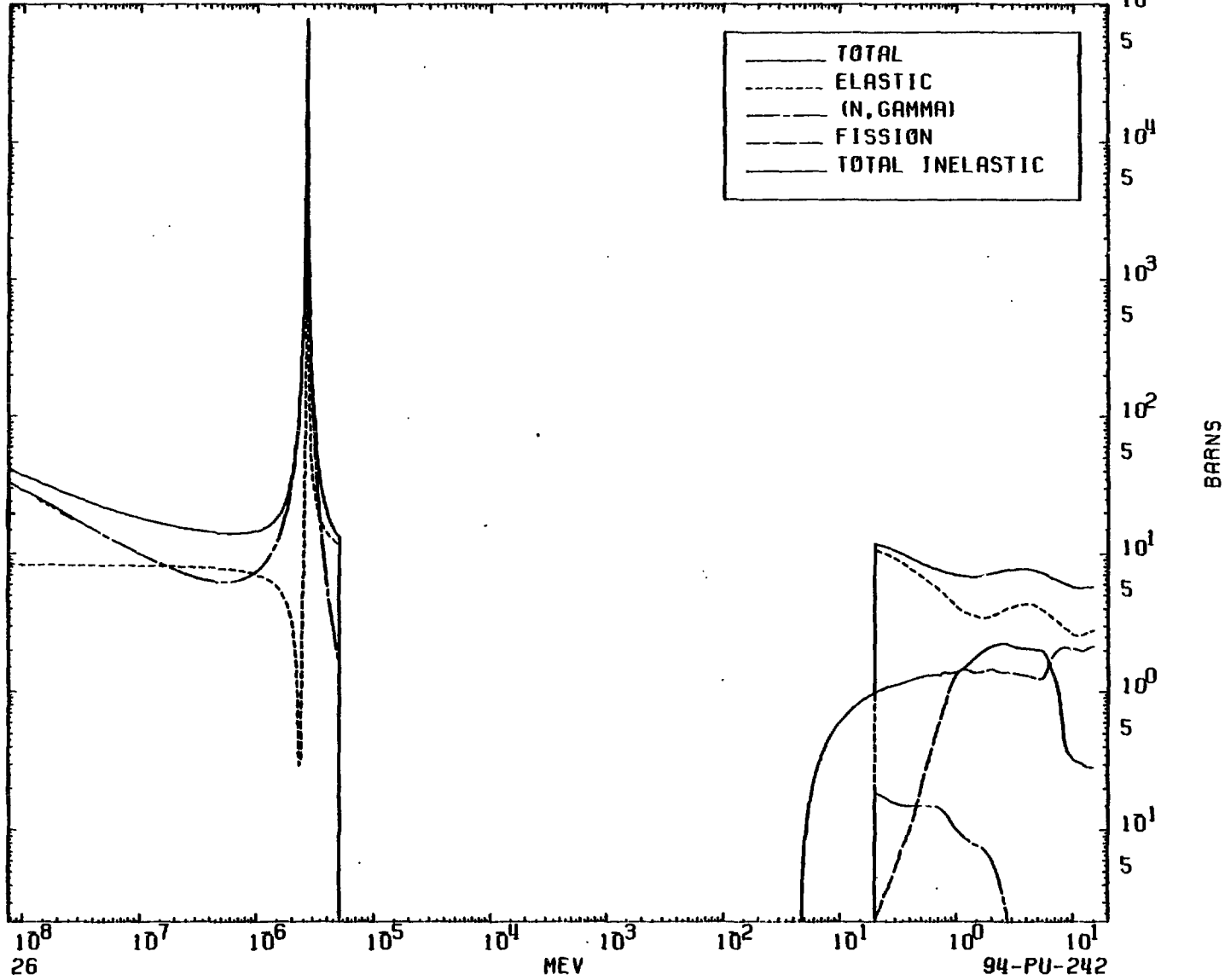




MAT 9450

CROSS SECTIONS

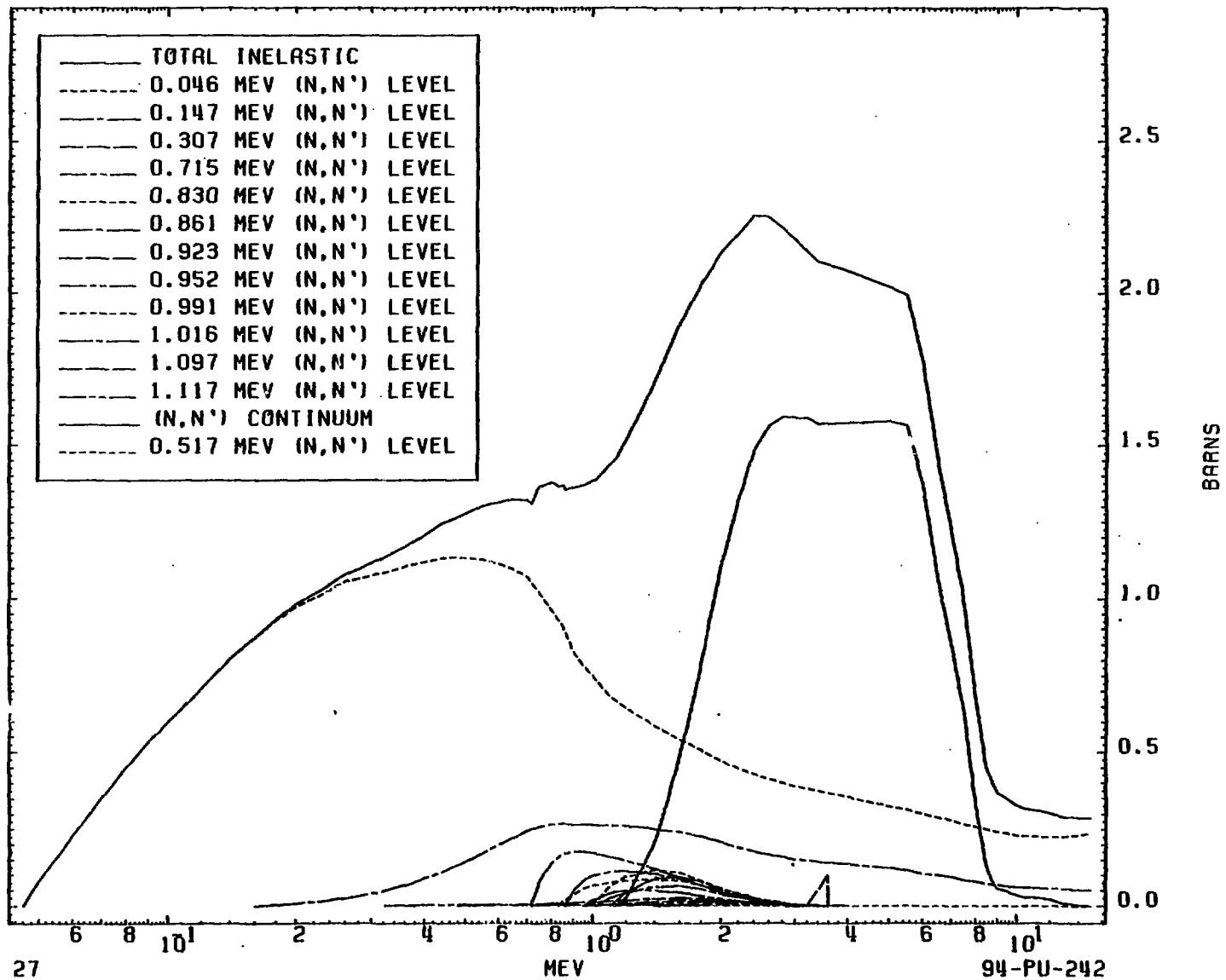
94-PU-242



MAT 9450

CROSS SECTIONS

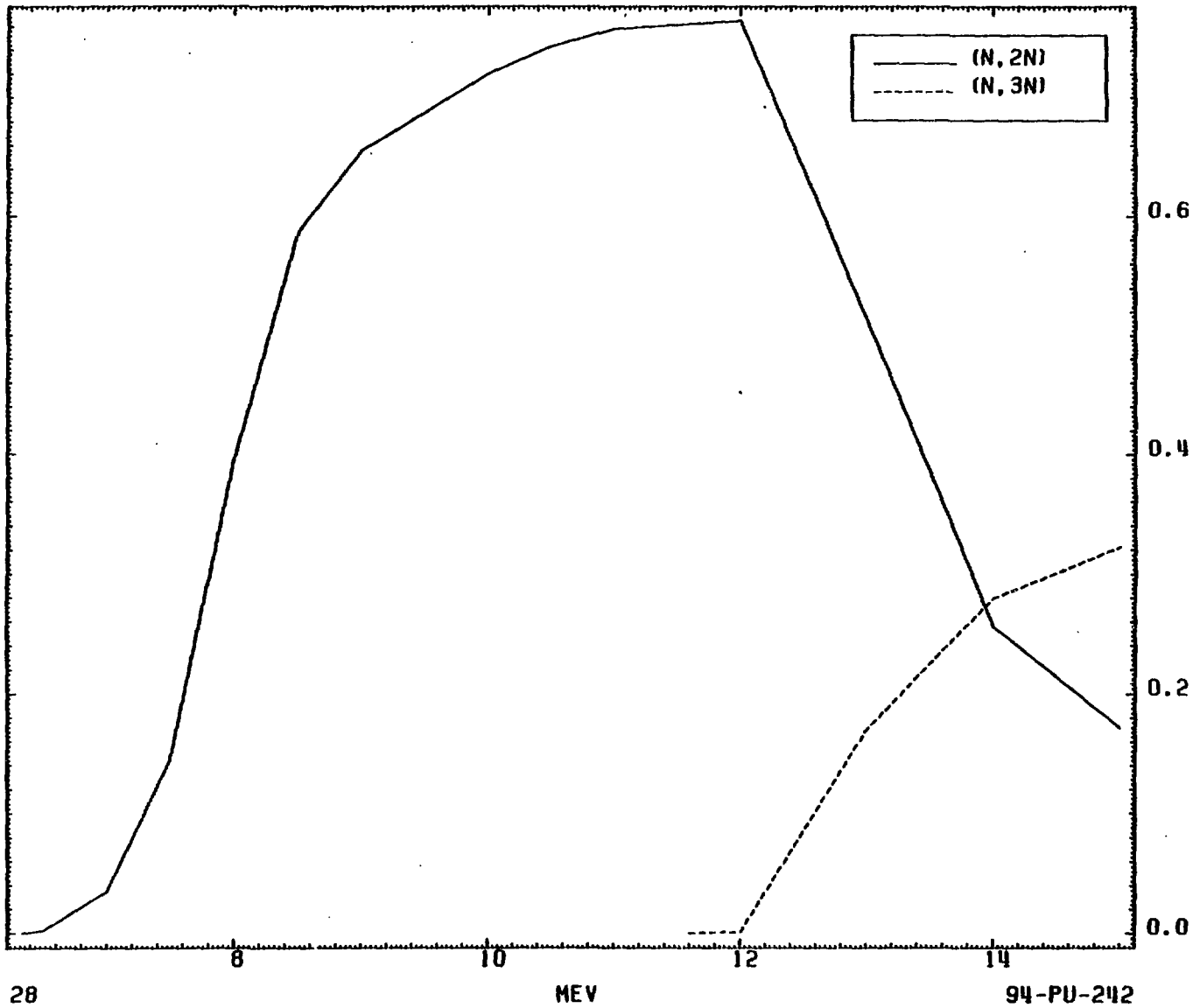
94-PU-242



MAT 9450

CROSS SECTIONS

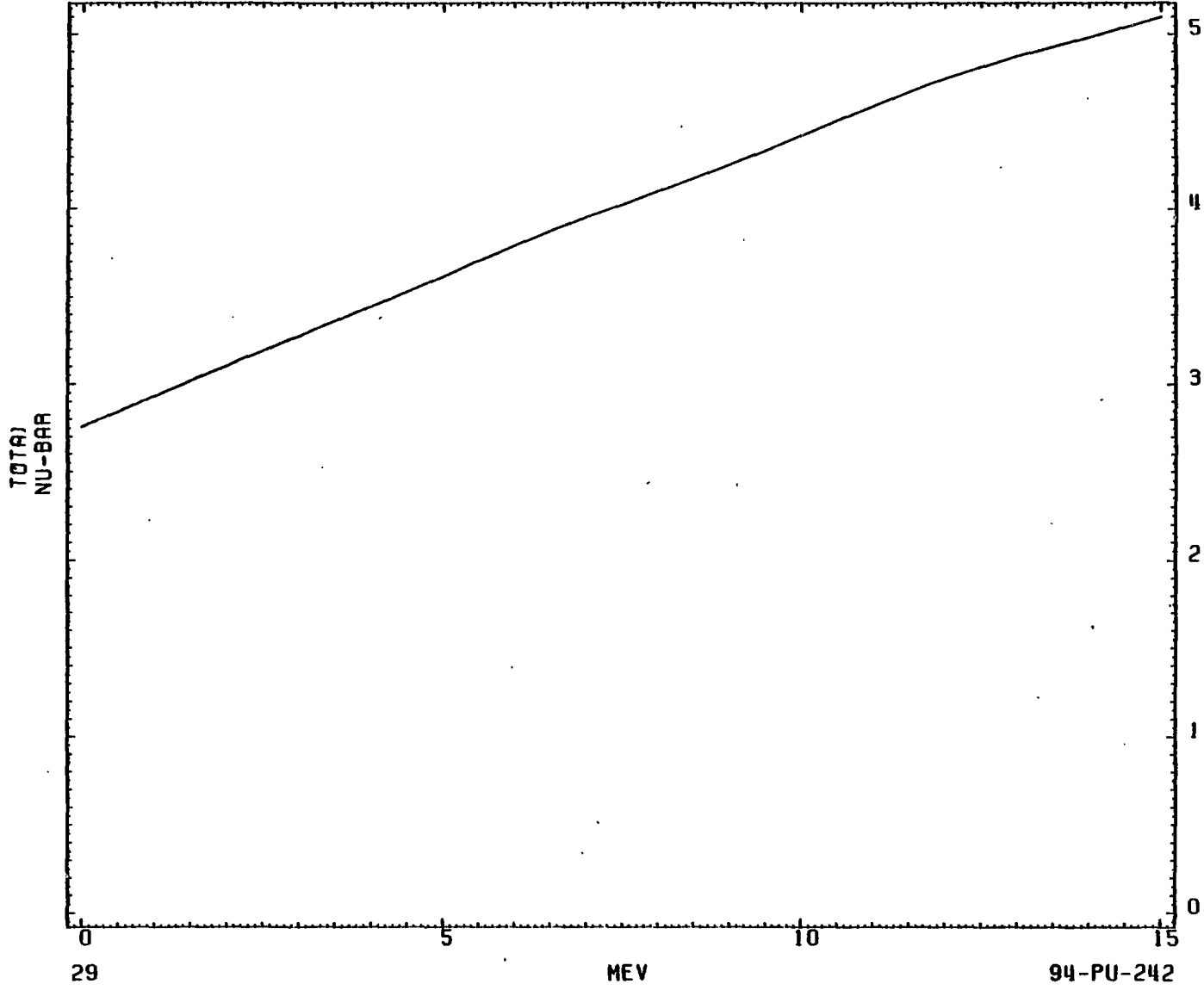
94-PU-242



MAT 9450

PARAMETERS

94-PU-242



29

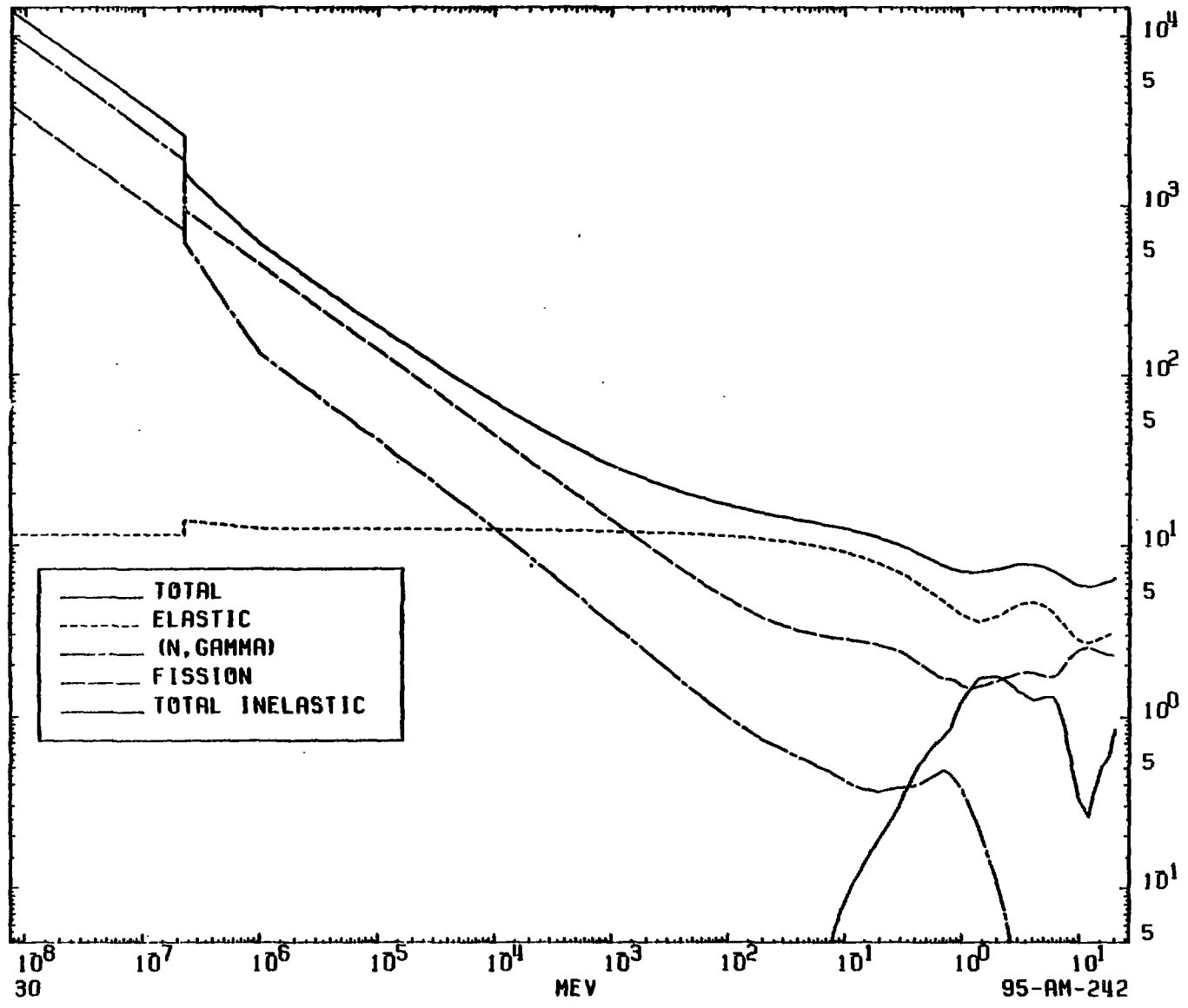
MEV

94-PU-242

MAT 9521

CROSS SECTIONS

95-AM-242



BARNs

30

MEV

95-AM-242

MAT

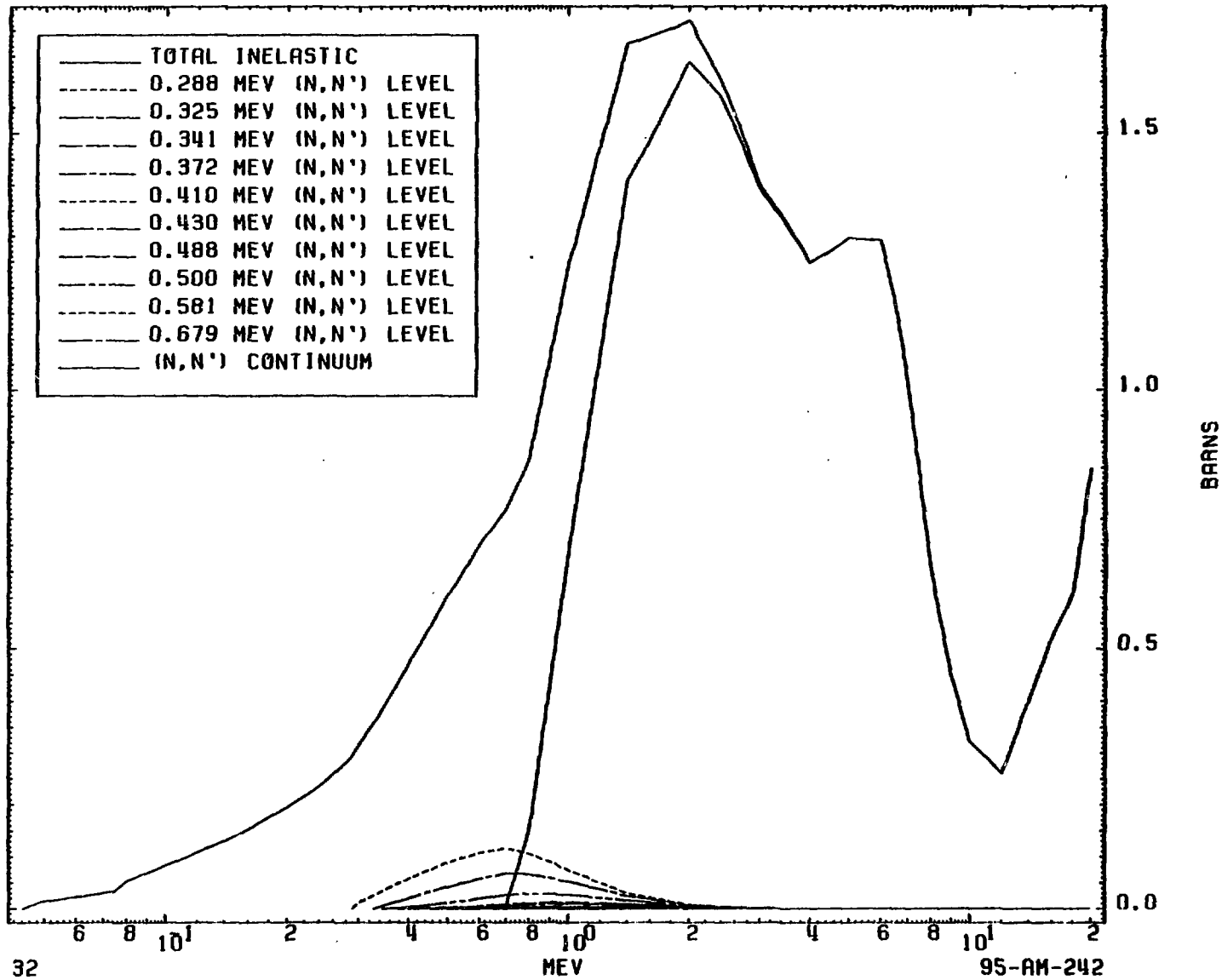
10

16

MAT 9521

CROSS SECTIONS

95-AM-242

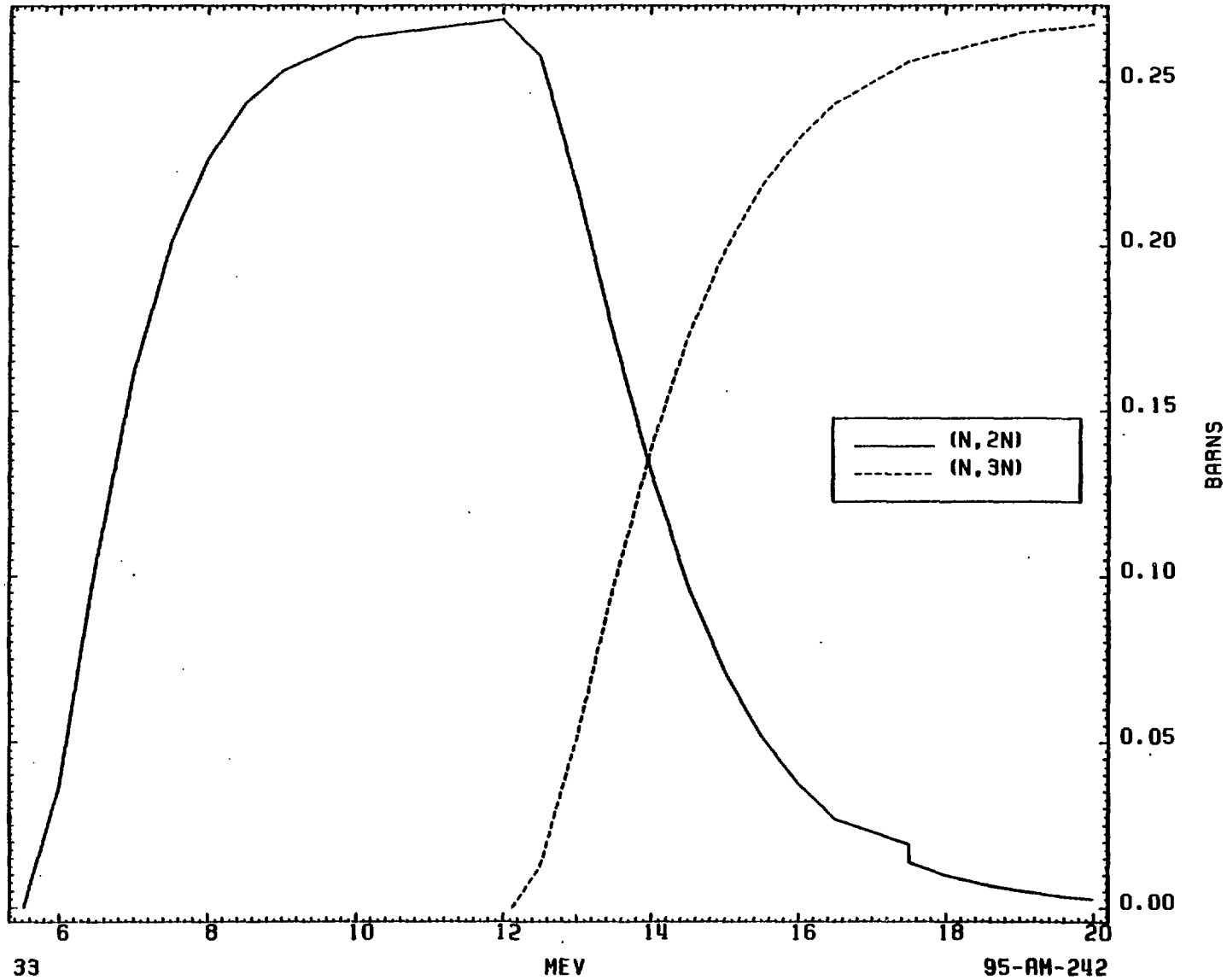


MAT 9521

MAT 9521

CROSS SECTIONS

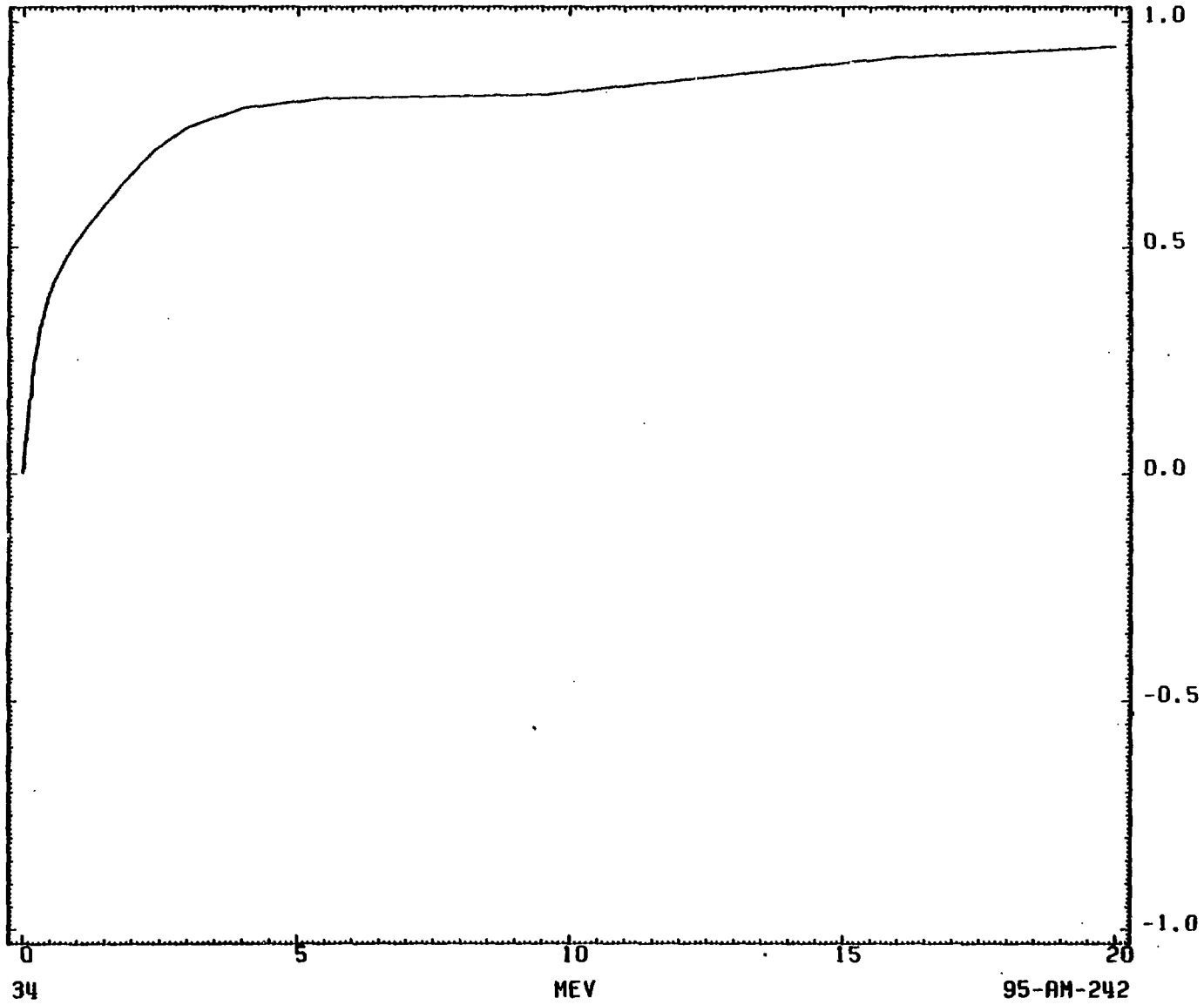
95-AM-242



MAT 9521

PARAMETERS

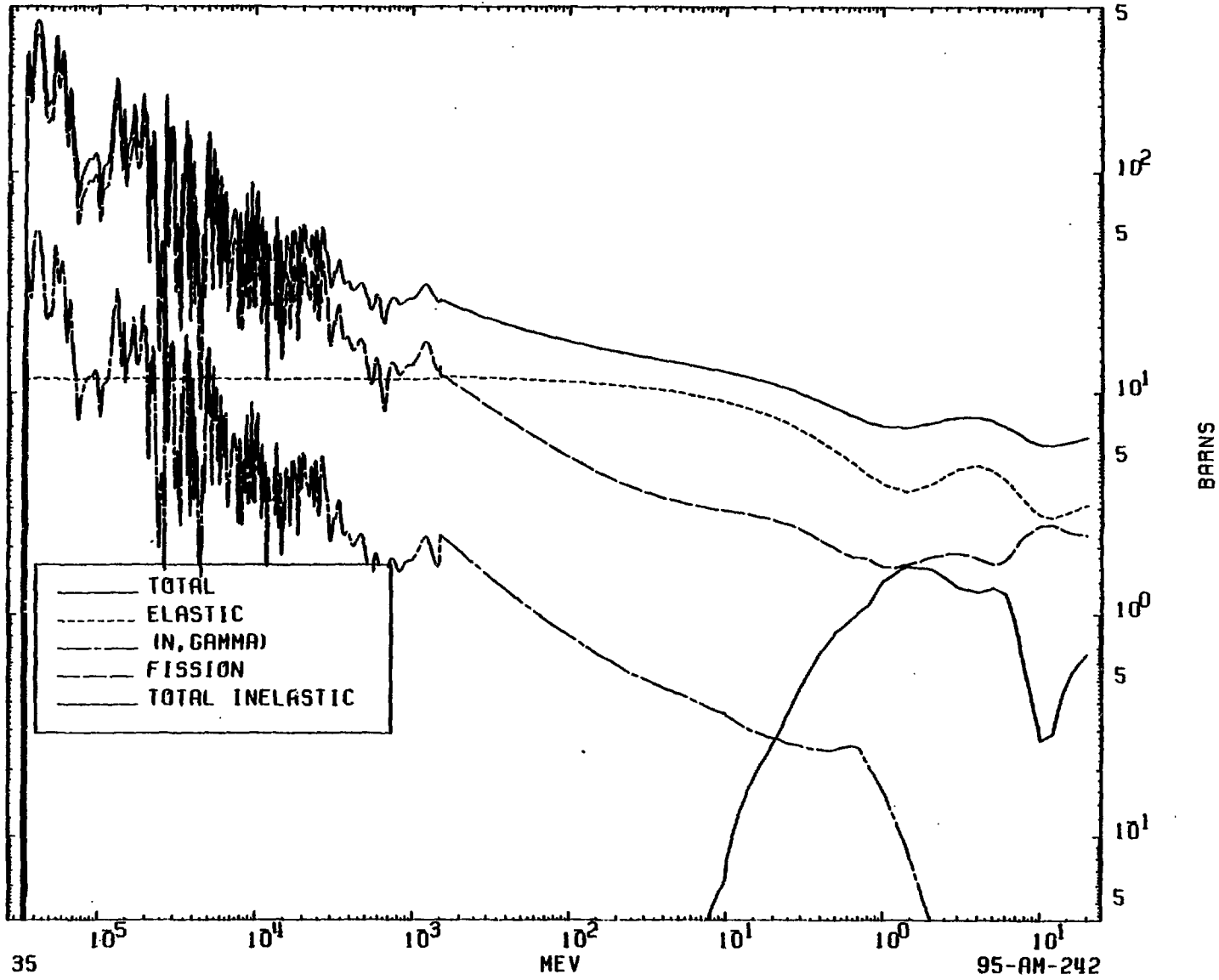
95-AM-242



MAT 9522

CROSS SECTIONS

95-AM-242

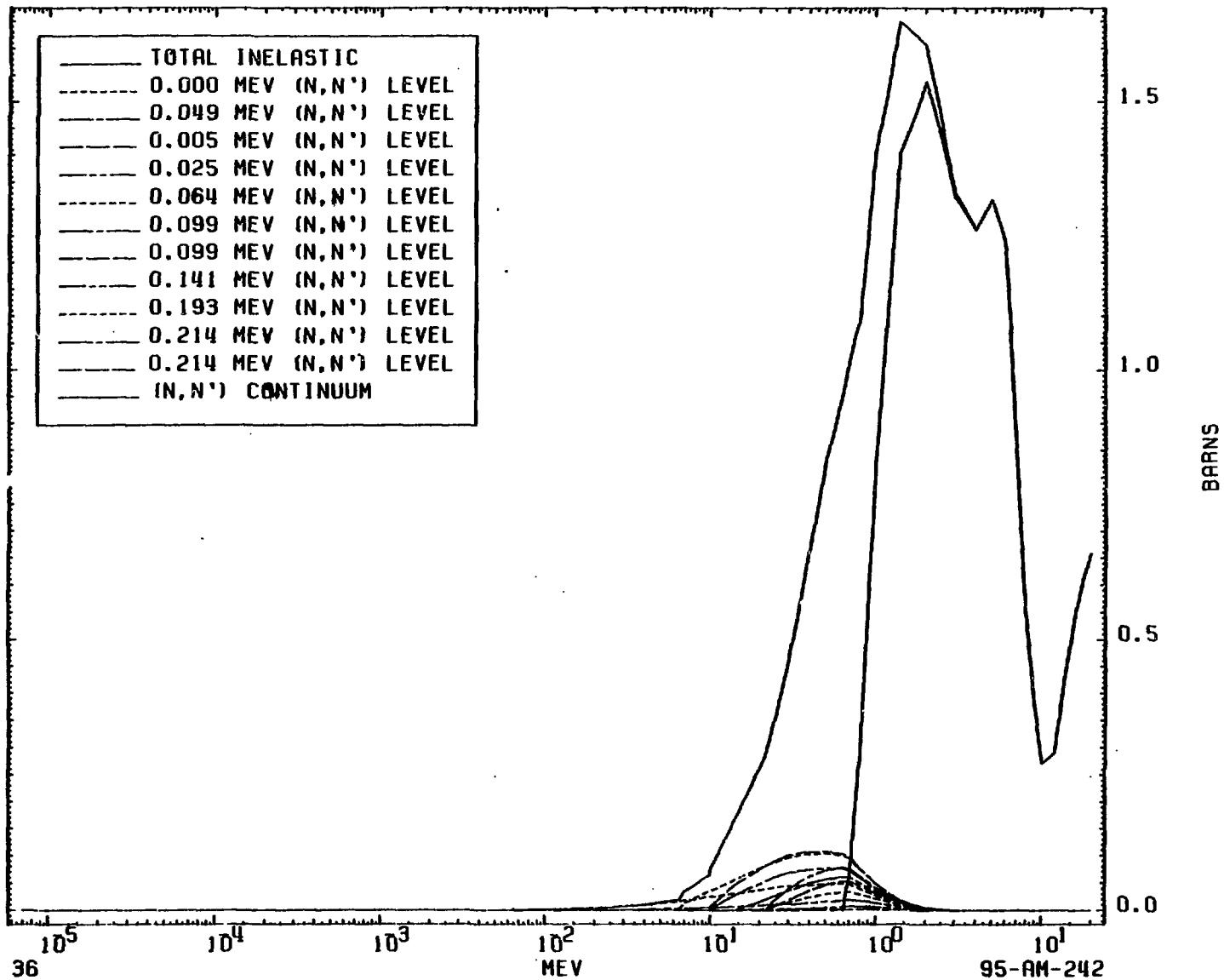


— TOTAL
- - - ELASTIC
- · - (N, GAMMA)
- - - FISSION
— TOTAL INELASTIC

MAT 9522

CROSS SECTIONS

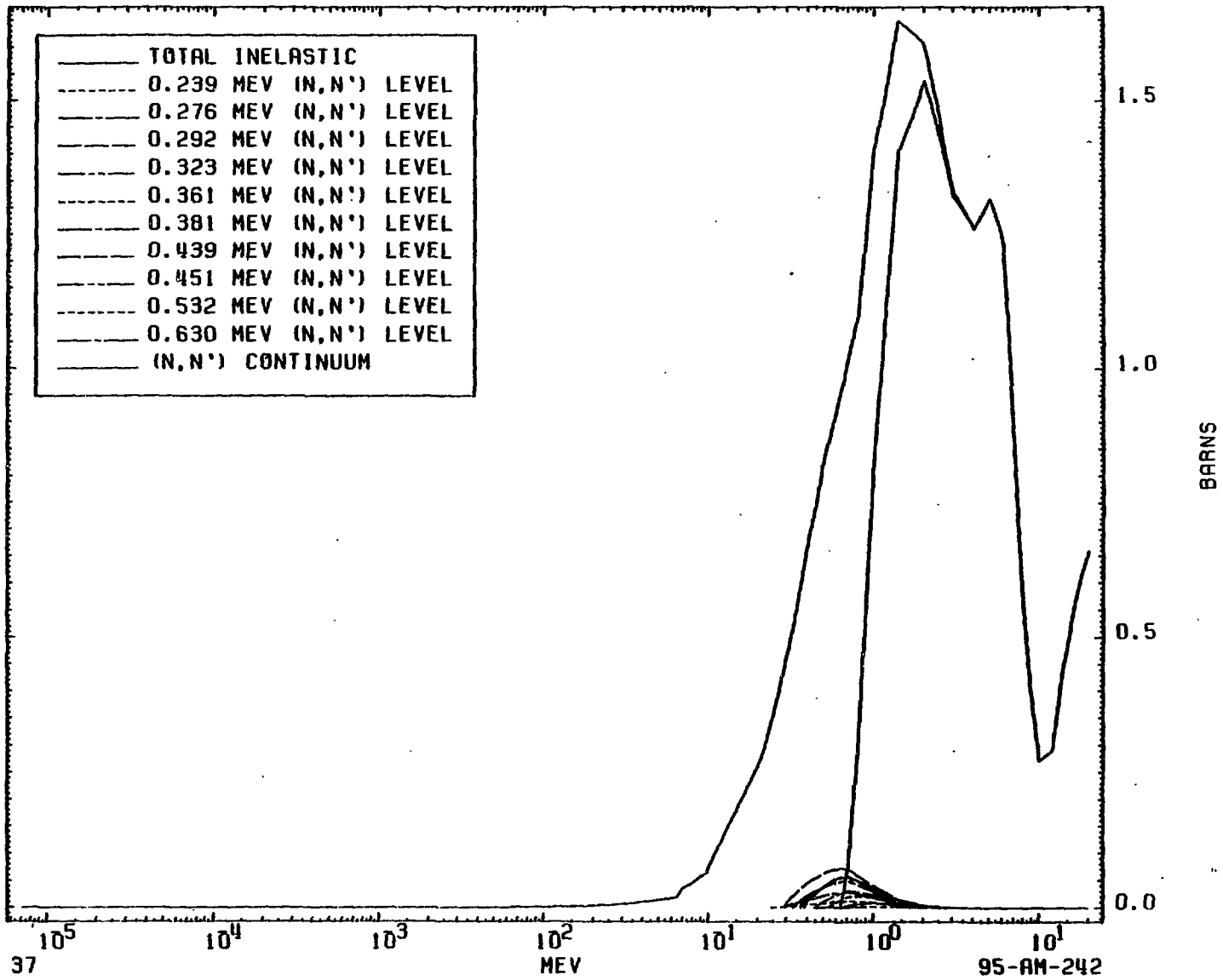
95-AM-242



MAT 9522

CROSS SECTIONS

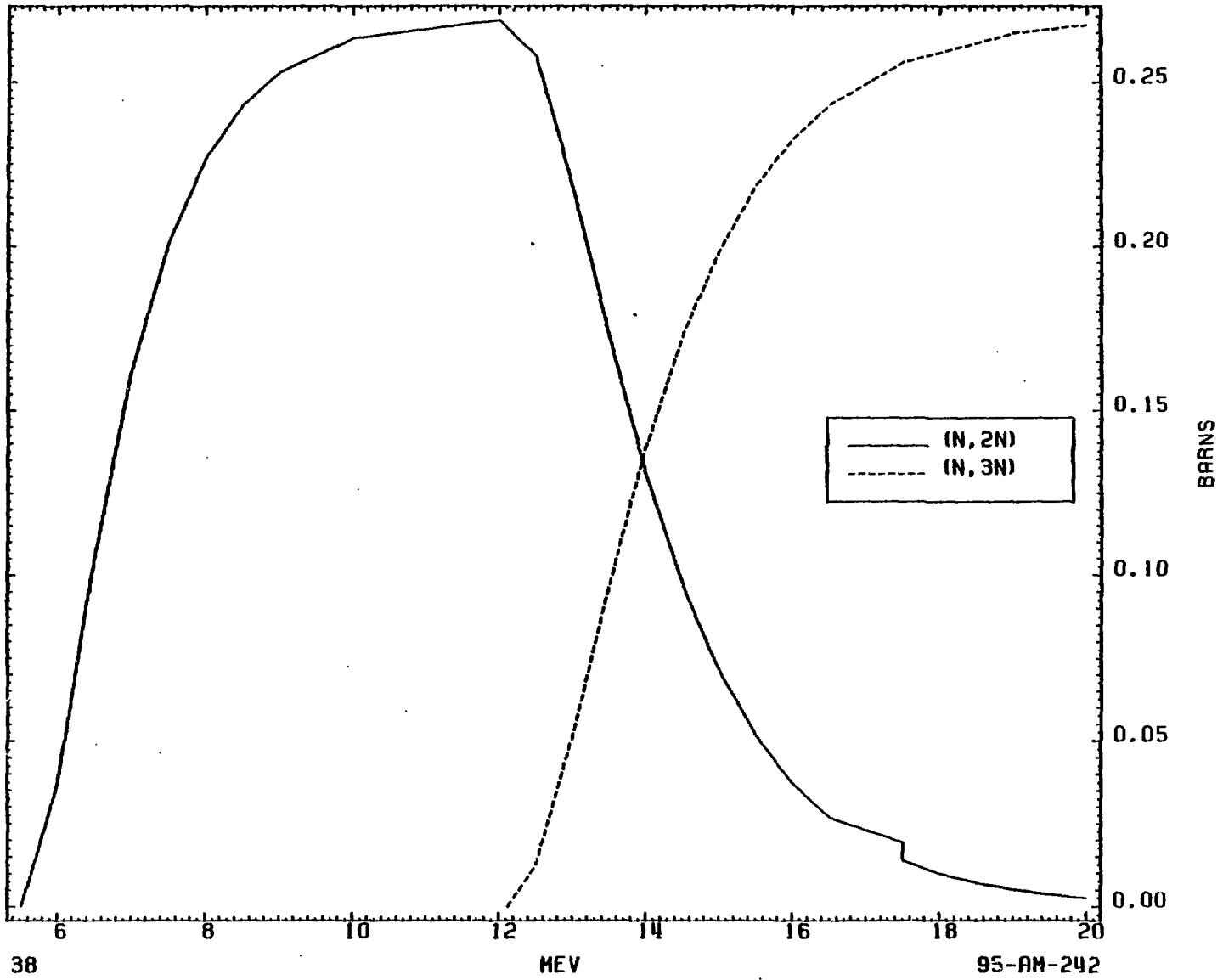
95-AM-242

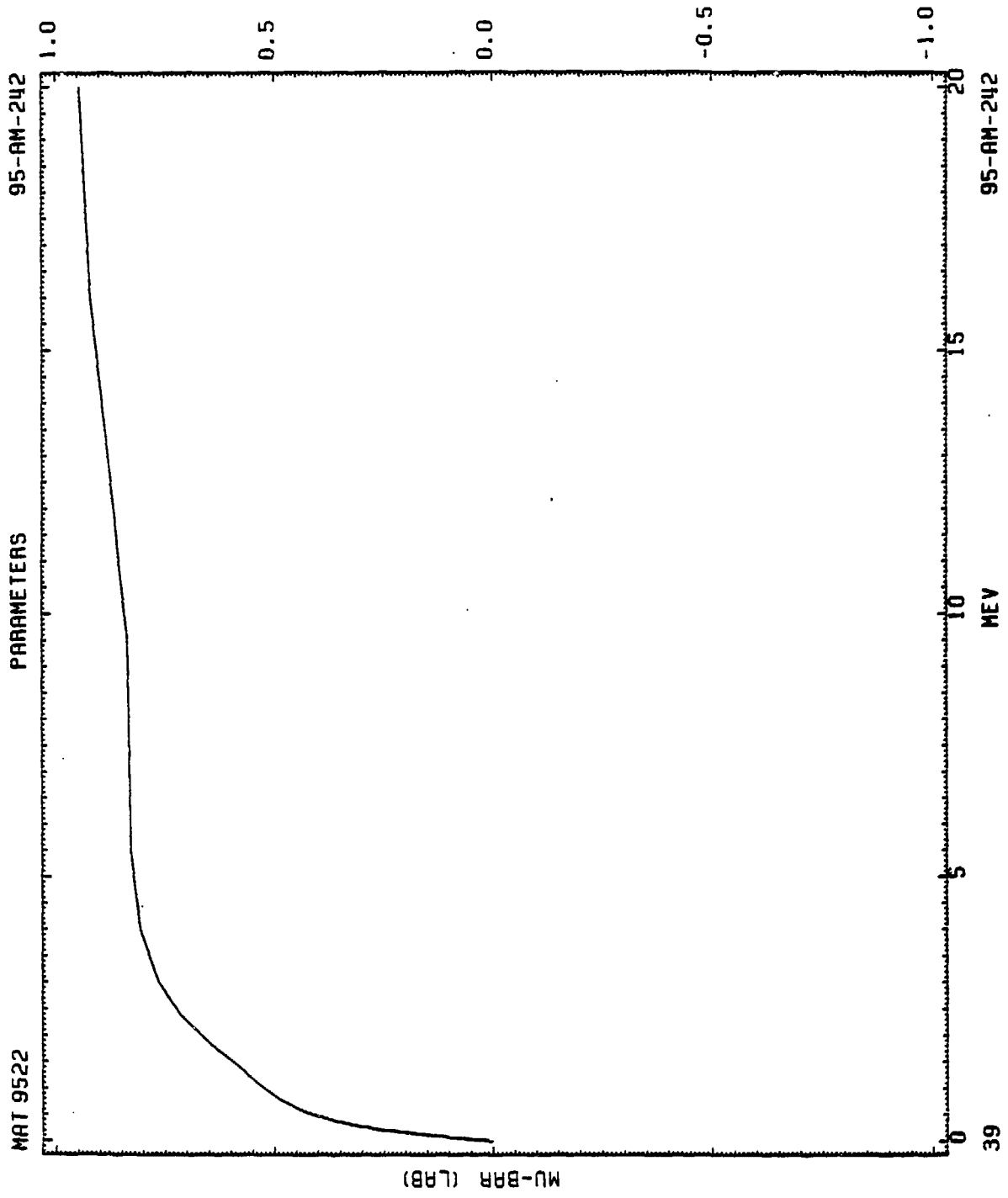


MAT 9522

CROSS SECTIONS

95-AM-242

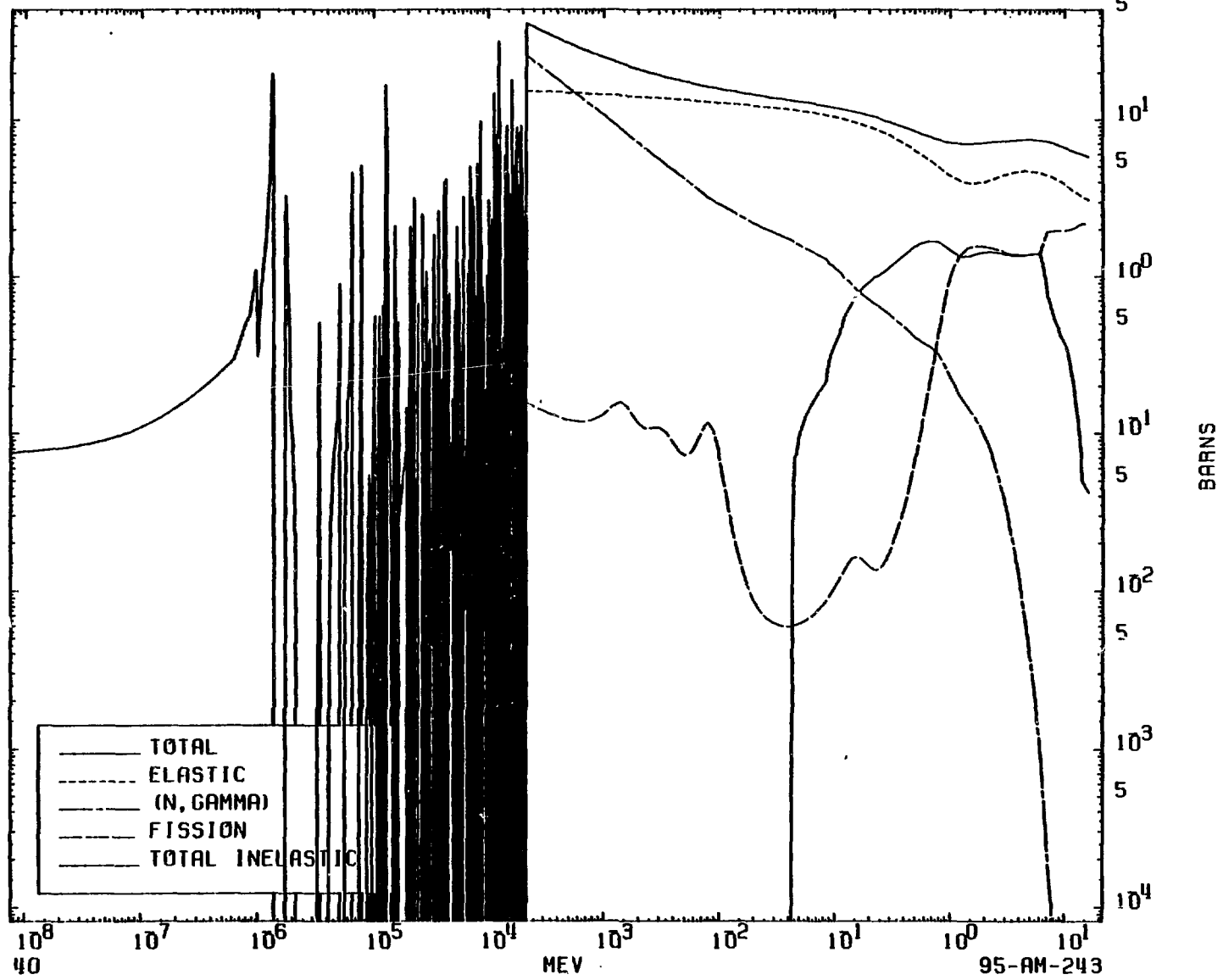




MAT 9543

CROSS SECTIONS

95-AM-243



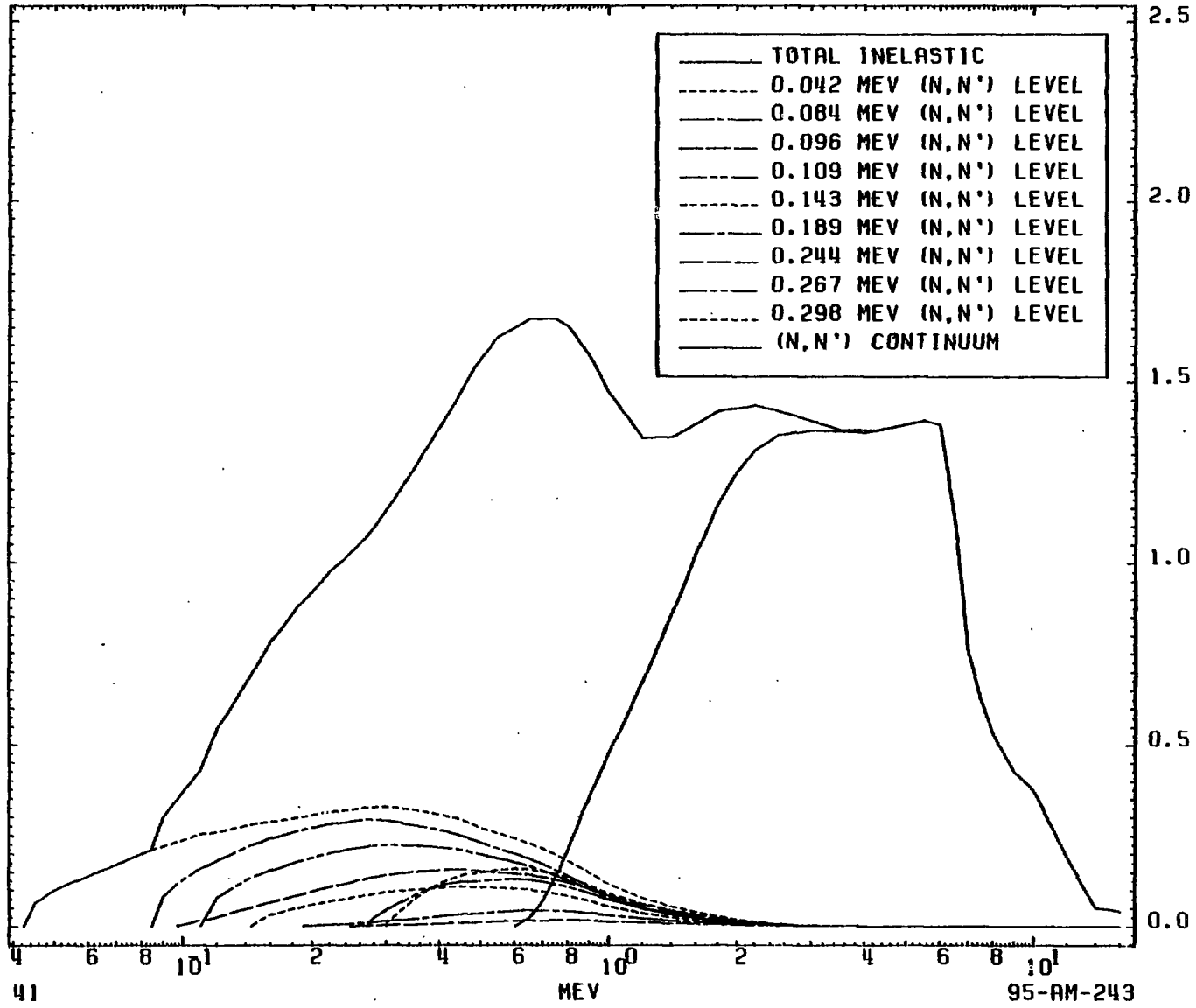
MAT 9

10⁸
26

MAT 9543

CROSS SECTIONS

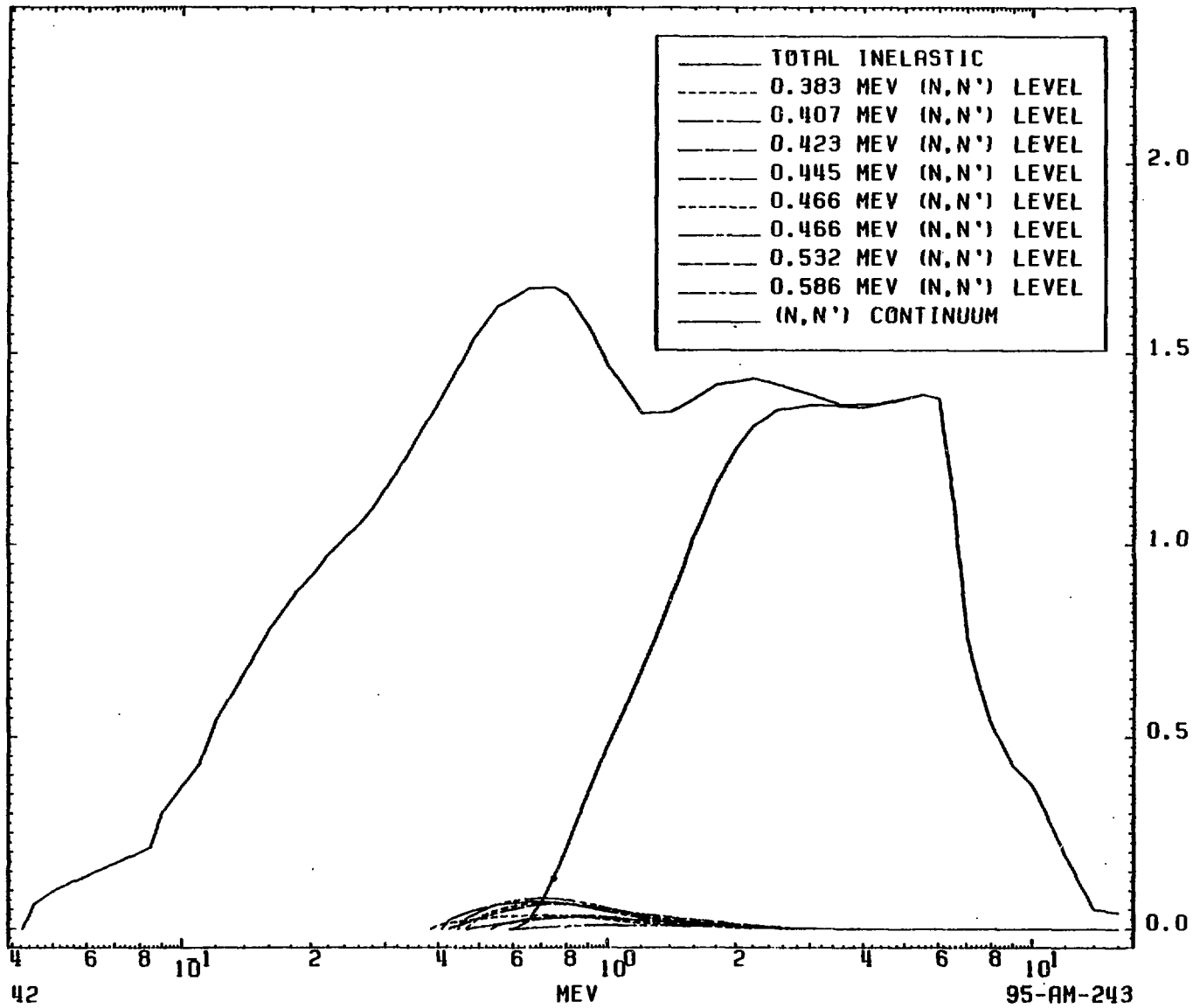
95-AM-243



MAT 9543

CROSS SECTIONS

95-AM-243



42

MEV

95-AM-243

BARNS

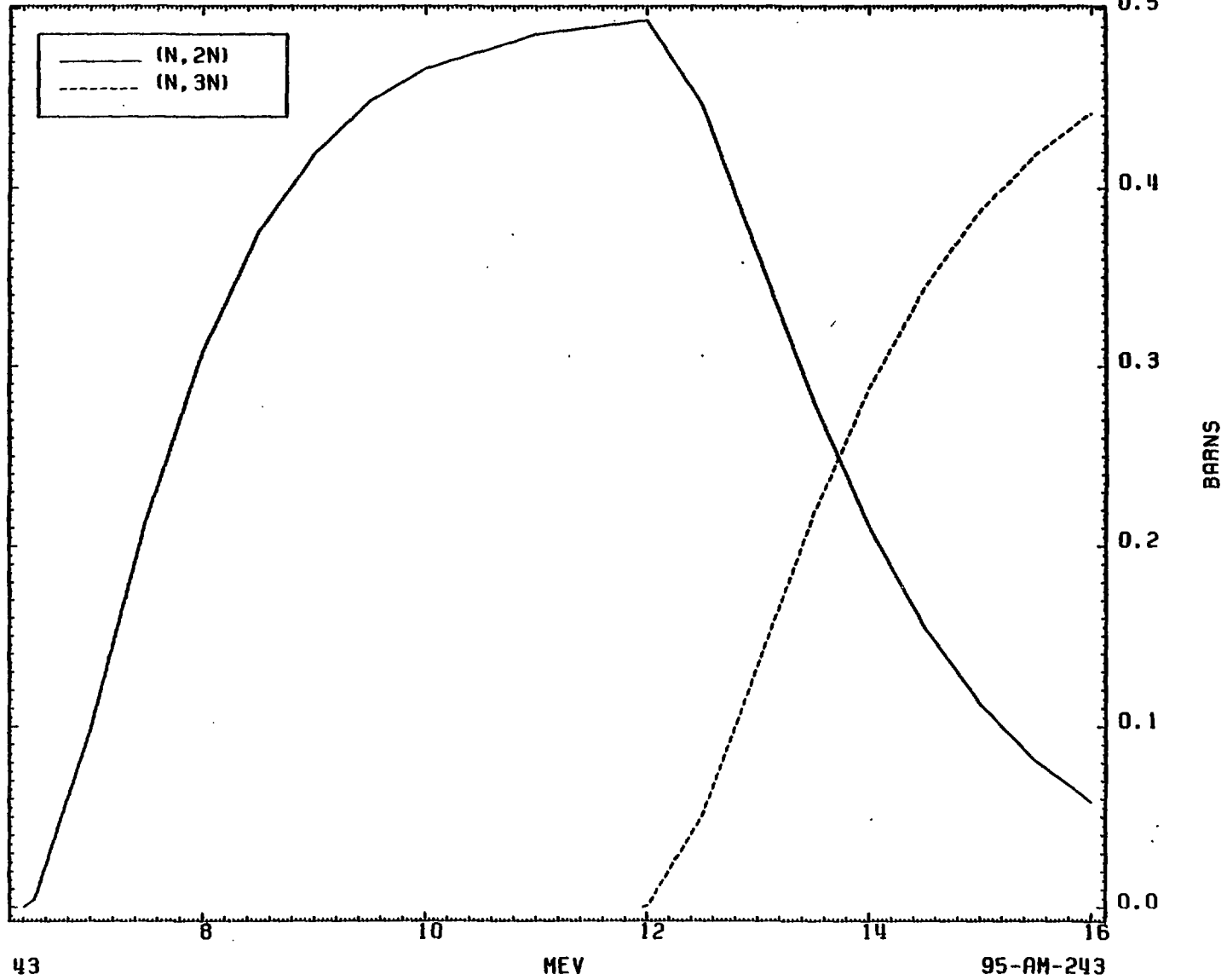
MA

2

MAT 9543

CROSS SECTIONS

95-AM-243

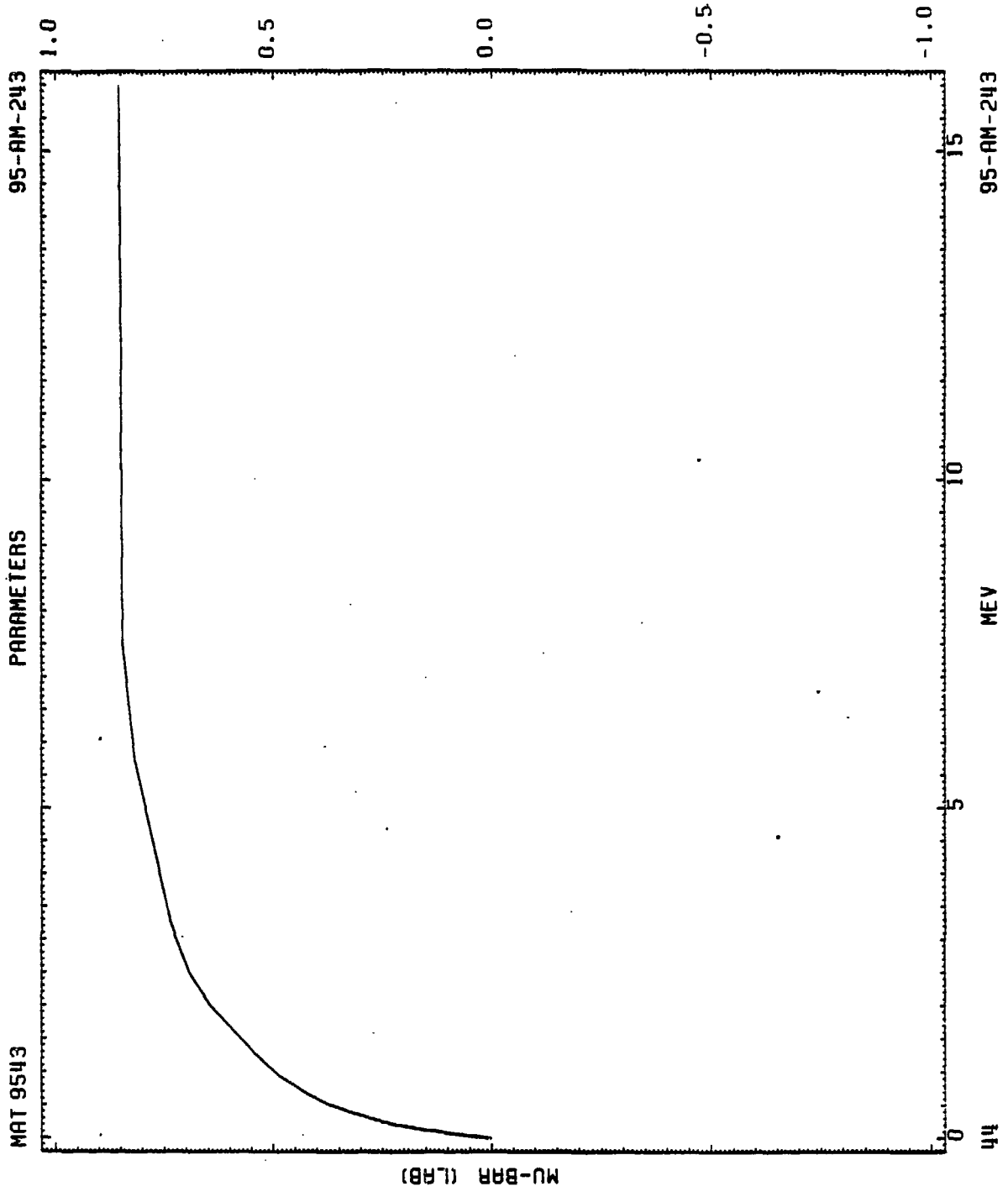


43

MEV

95-AM-243

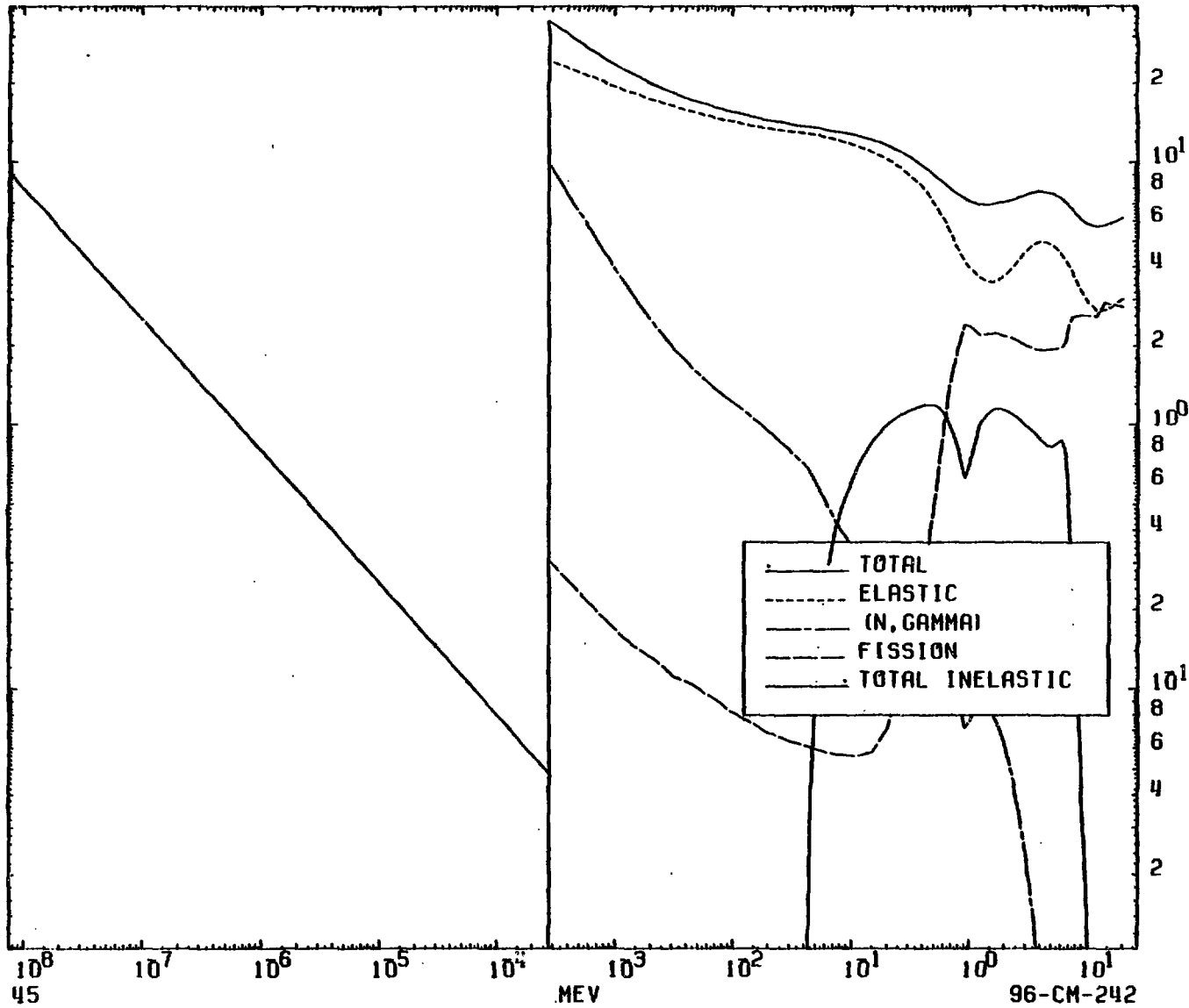
TOT(A)



MAT 9642

CROSS SECTIONS

96-CM-242



BARNs

— TOTAL
- - - ELASTIC
- · - (N, GAMMA)
- - - FISSION
- - - TOTAL INELASTIC

10^8
45

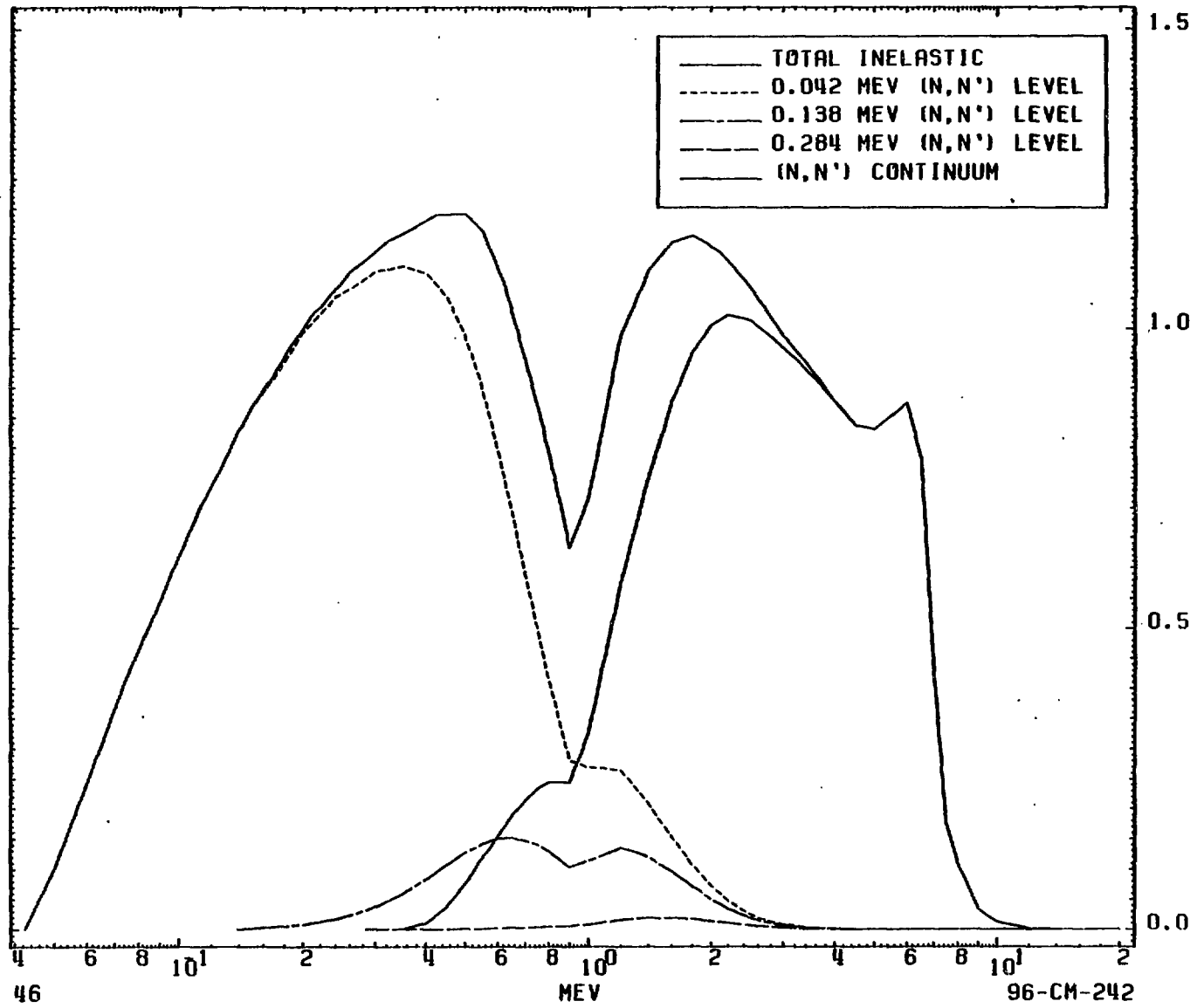
MEV

96-CM-242

MAT 9642

CROSS SECTIONS

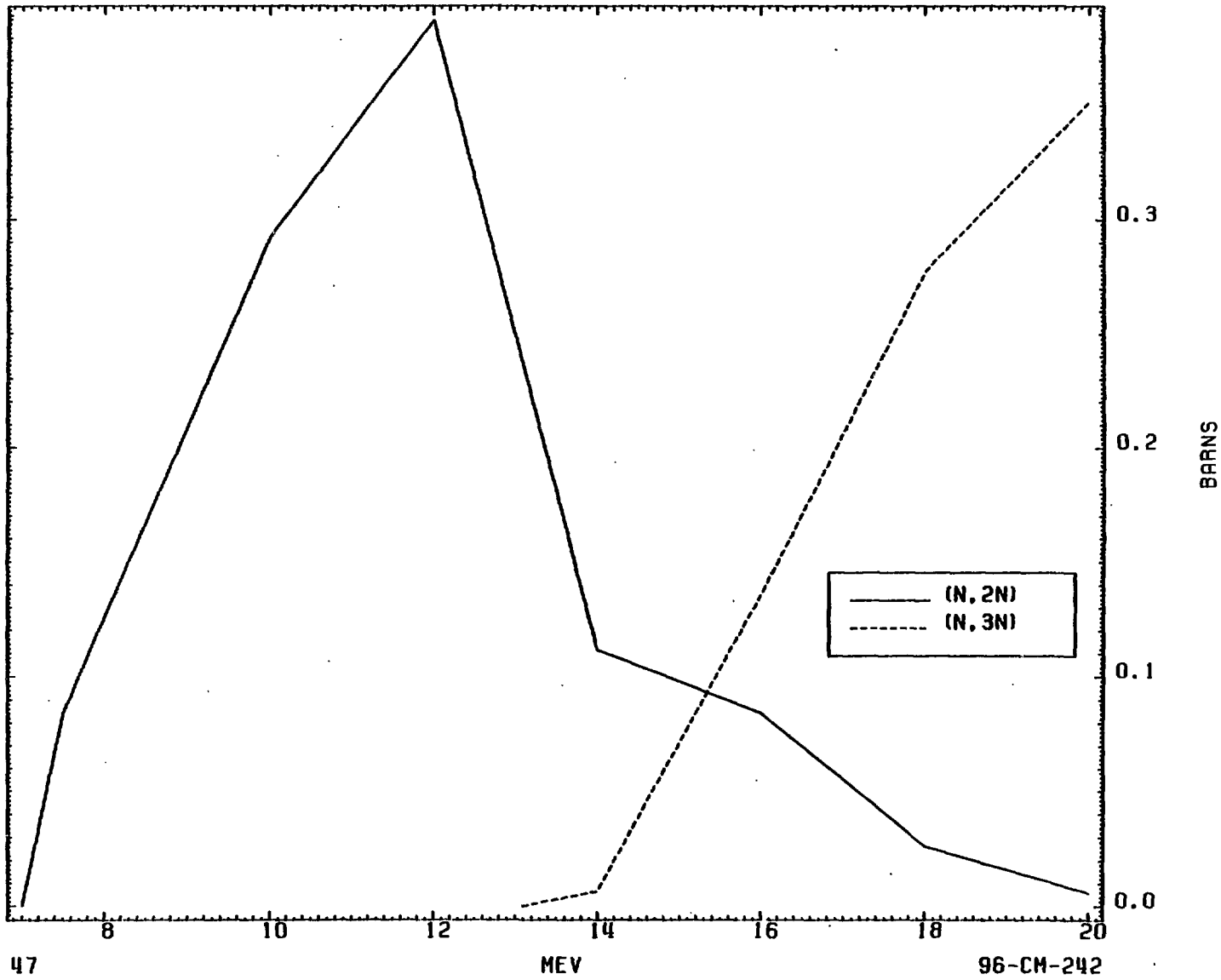
96-CM-242



MAT 9642

CROSS SECTIONS

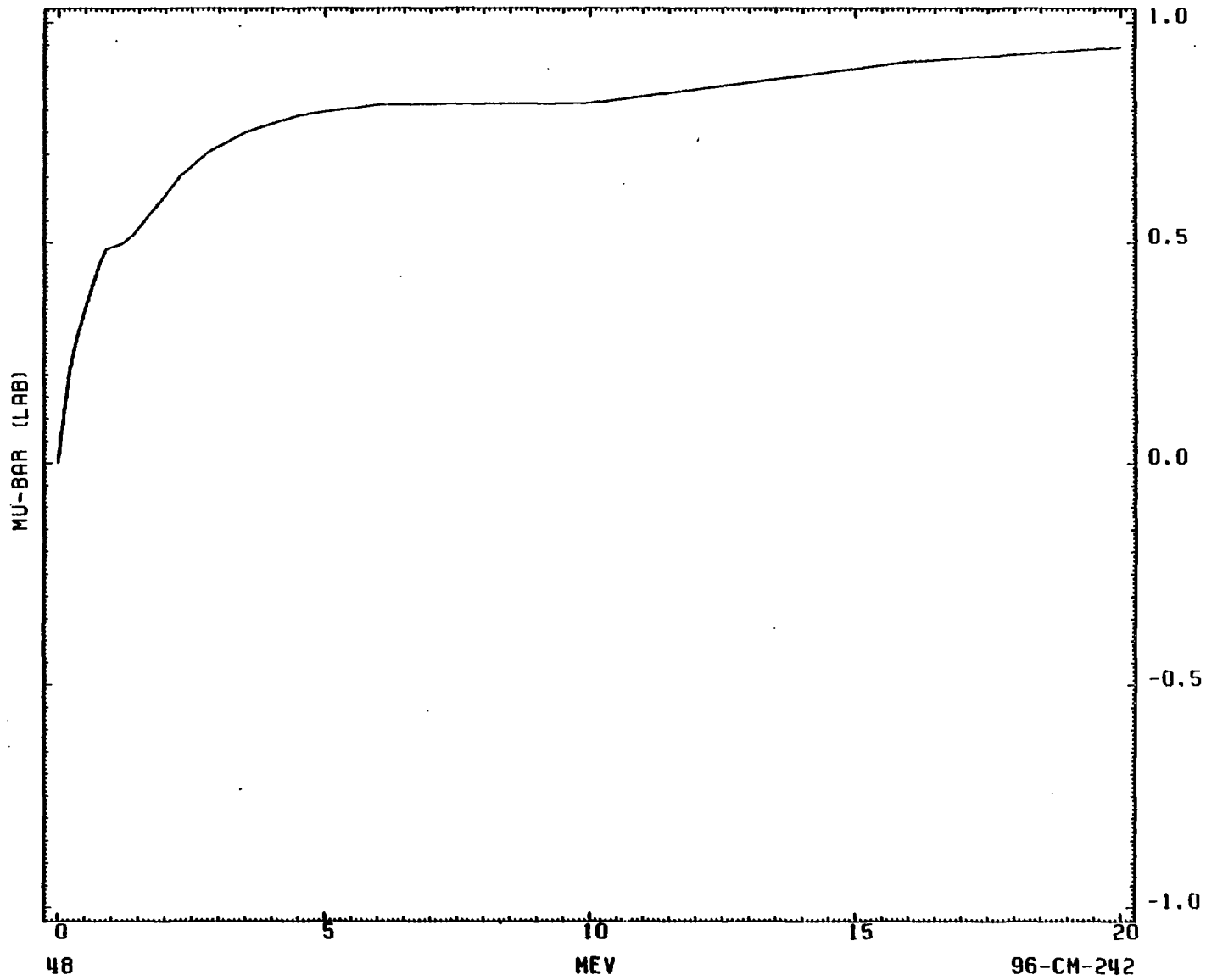
96-CM-242



MAT 9642

PARAMETERS

96-CM-242



48

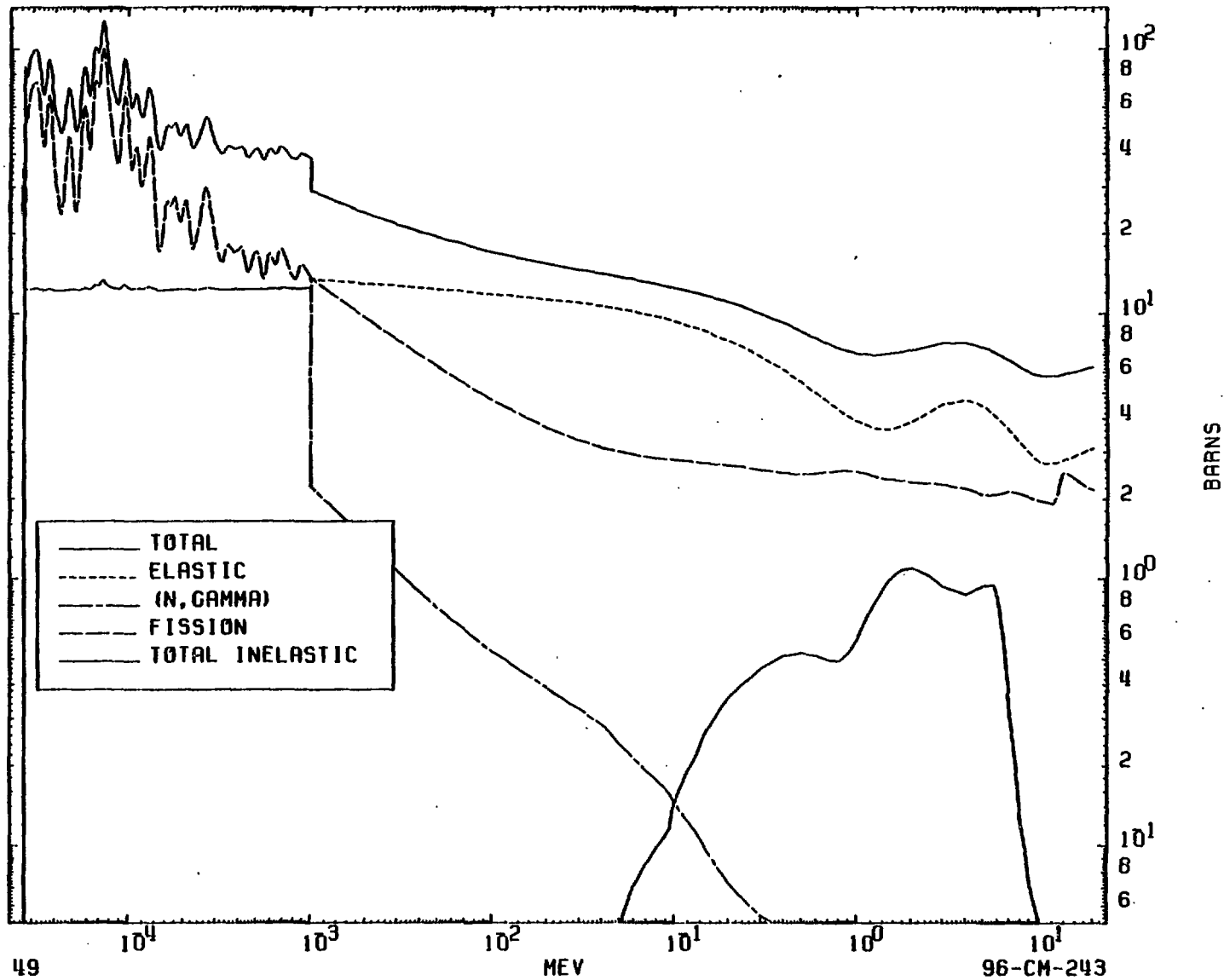
MEV

96-CM-242

MAT 9643

CROSS SECTIONS

96-CM-243



49

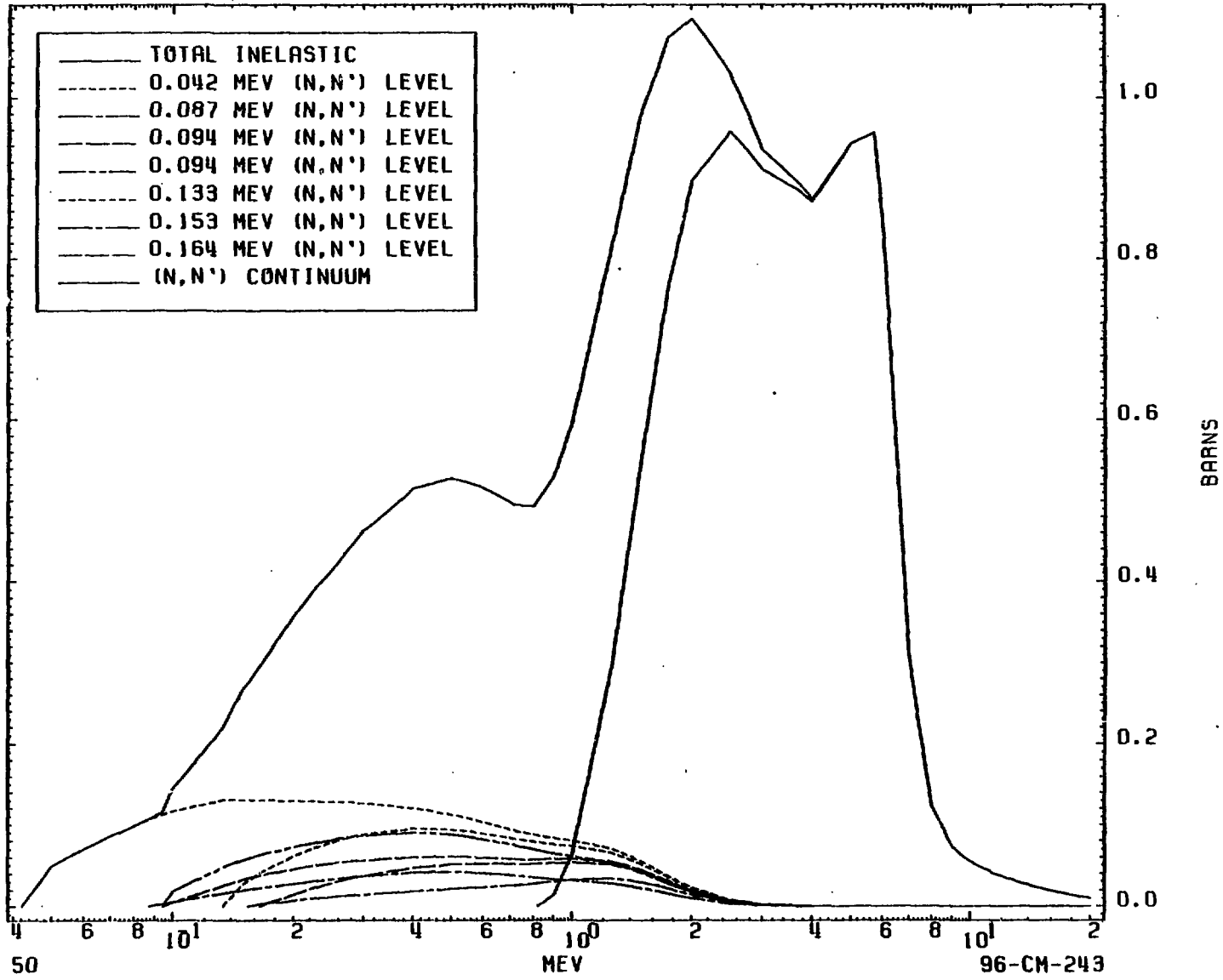
MEV

96-CM-243

MAT 9643

CROSS SECTIONS

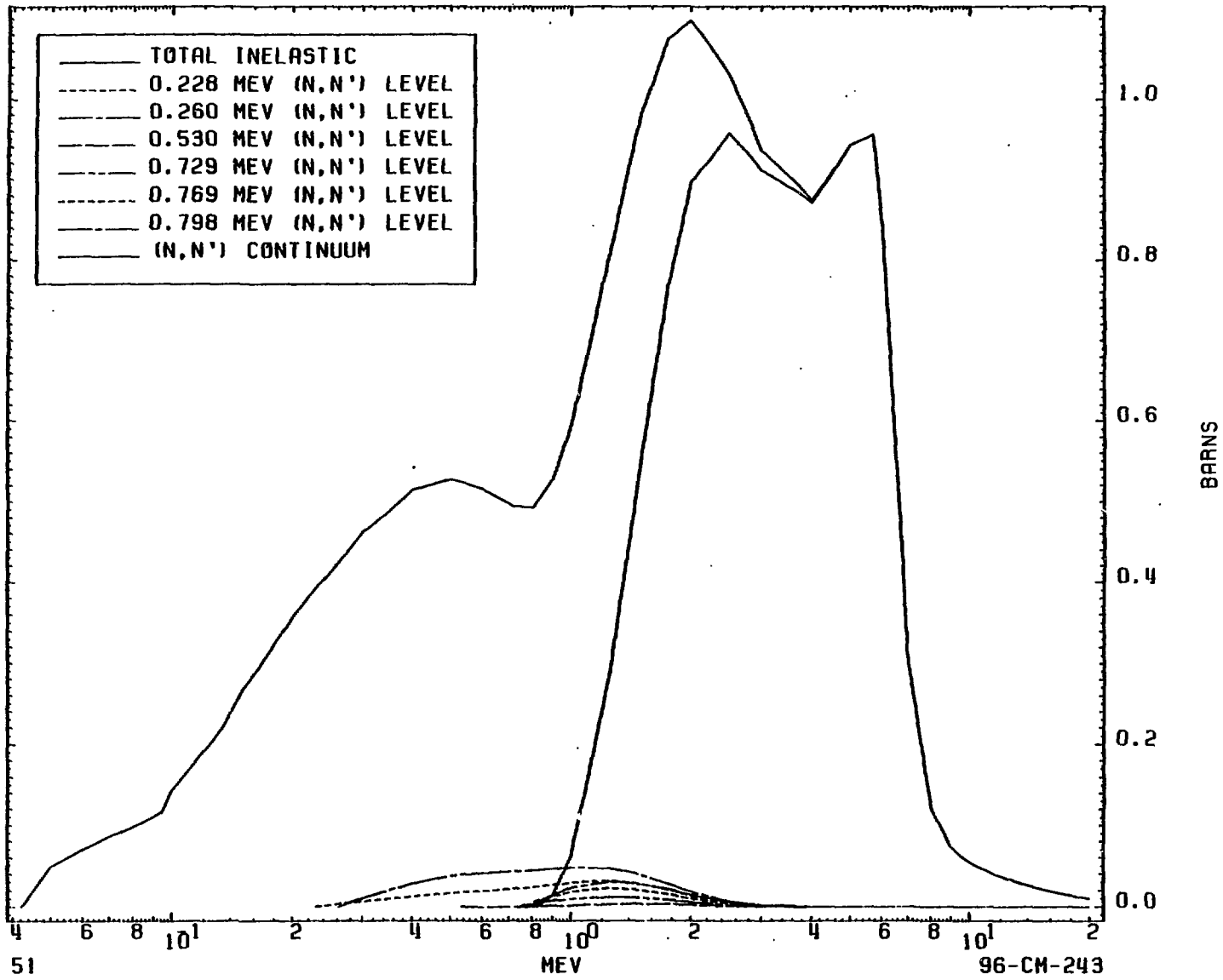
96-CM-243



MAT 9643

CROSS SECTIONS

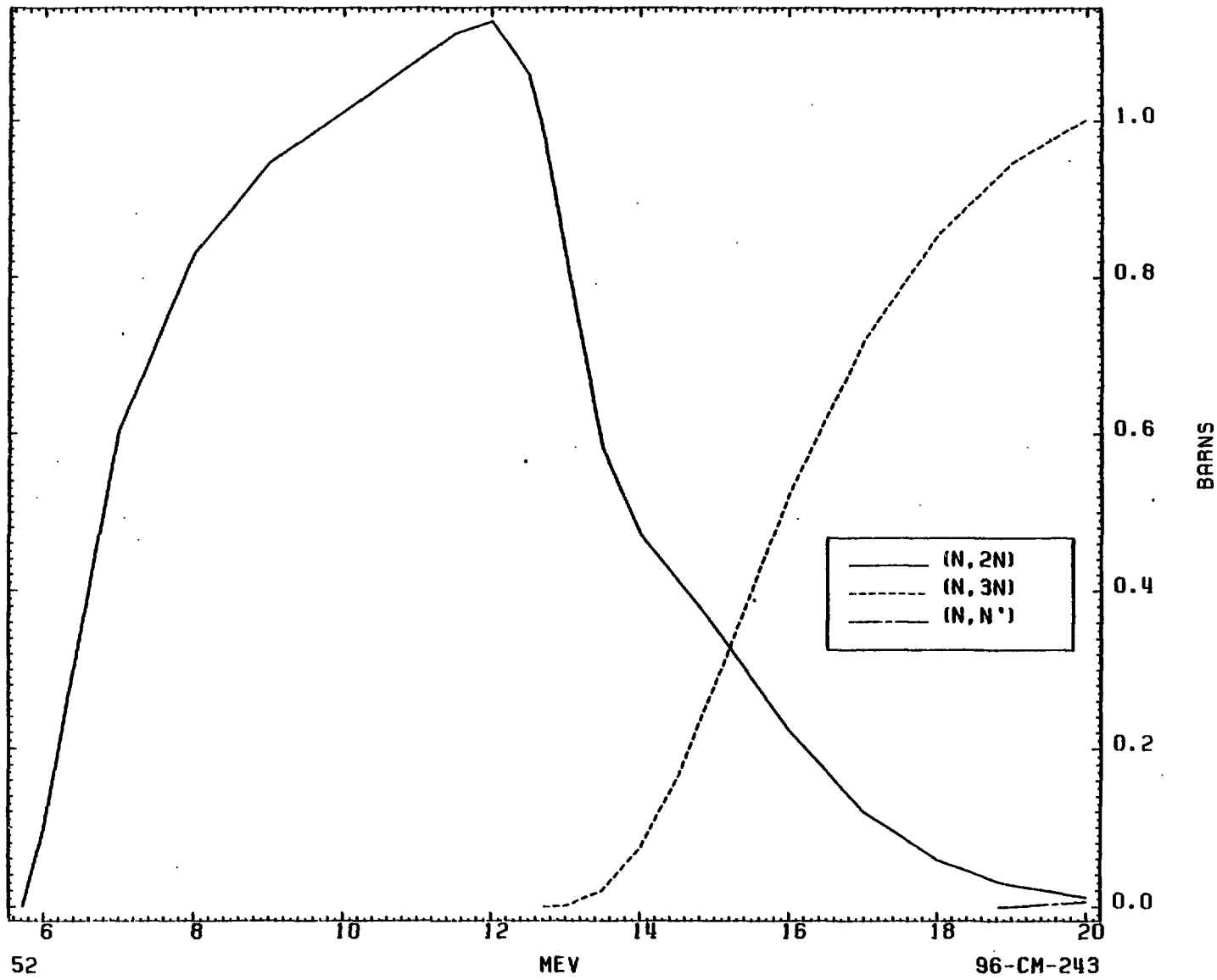
96-CM-243



MAT 9643

CROSS SECTIONS

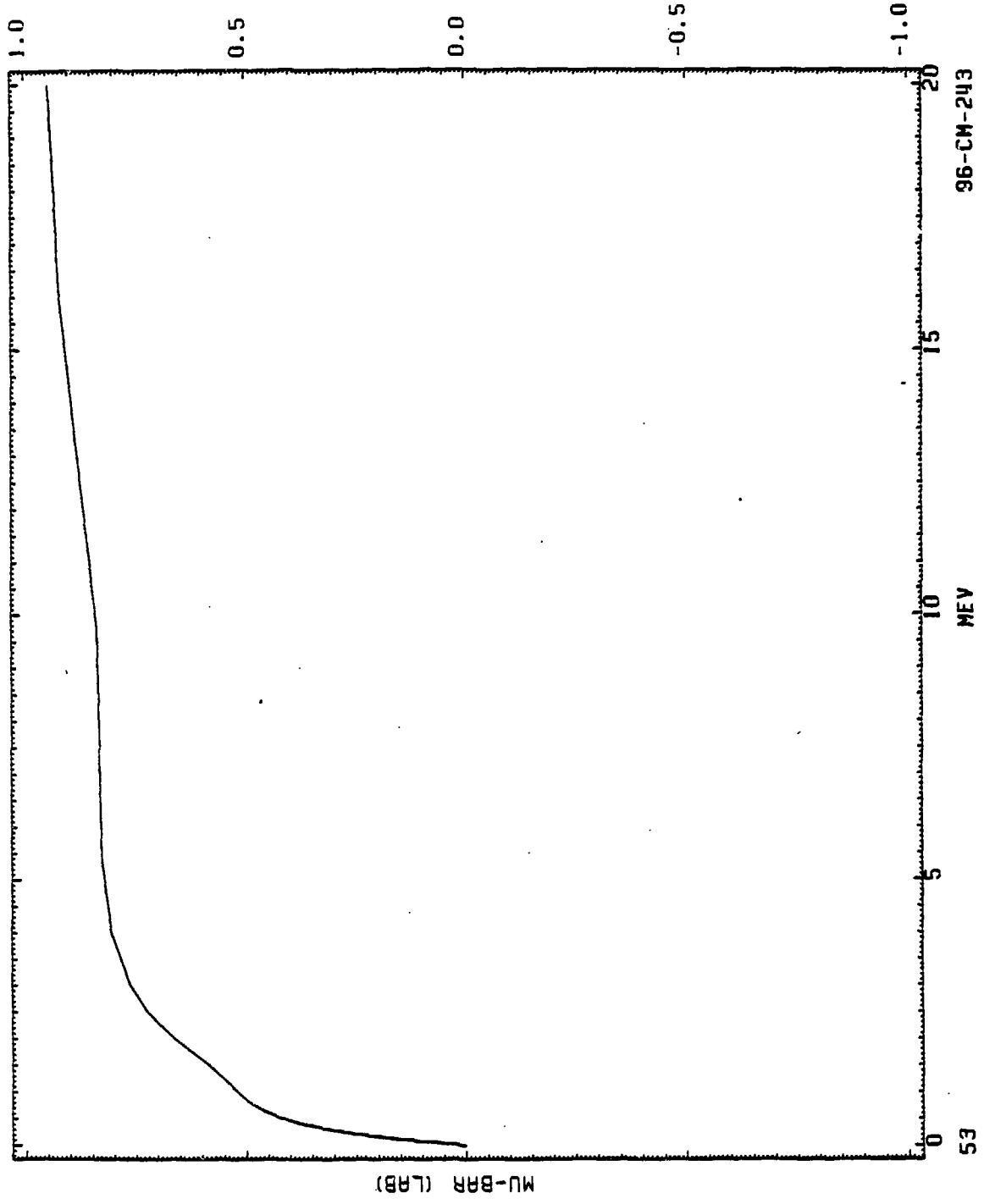
96-CM-243



96-CM-243

PARAMETERS

MAT 9643



96-CM-243

MEV

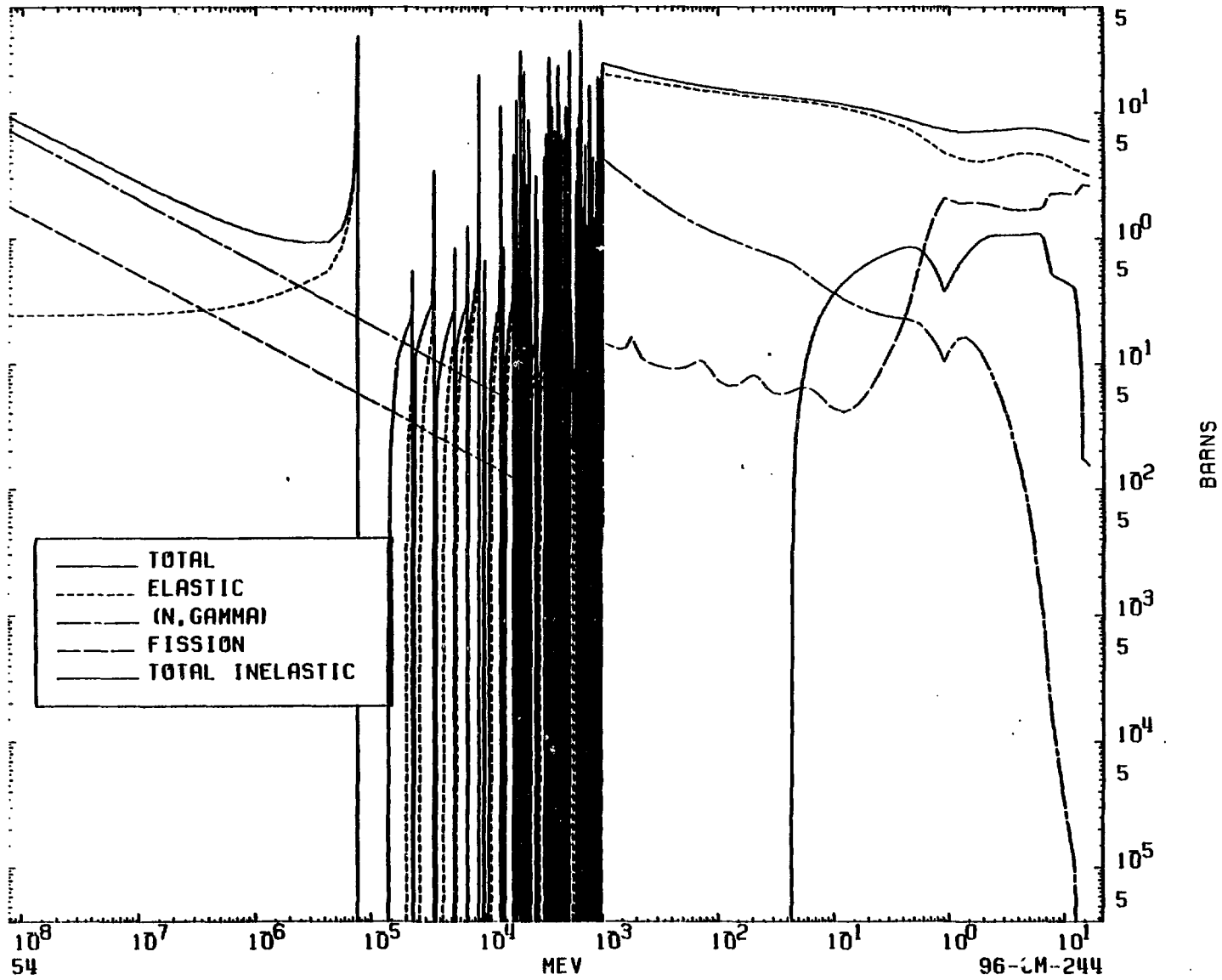
53

MU-BAR (LBB)

MAT 9644

CROSS SECTIONS

96-CM-244



MAT 9



54

MEV

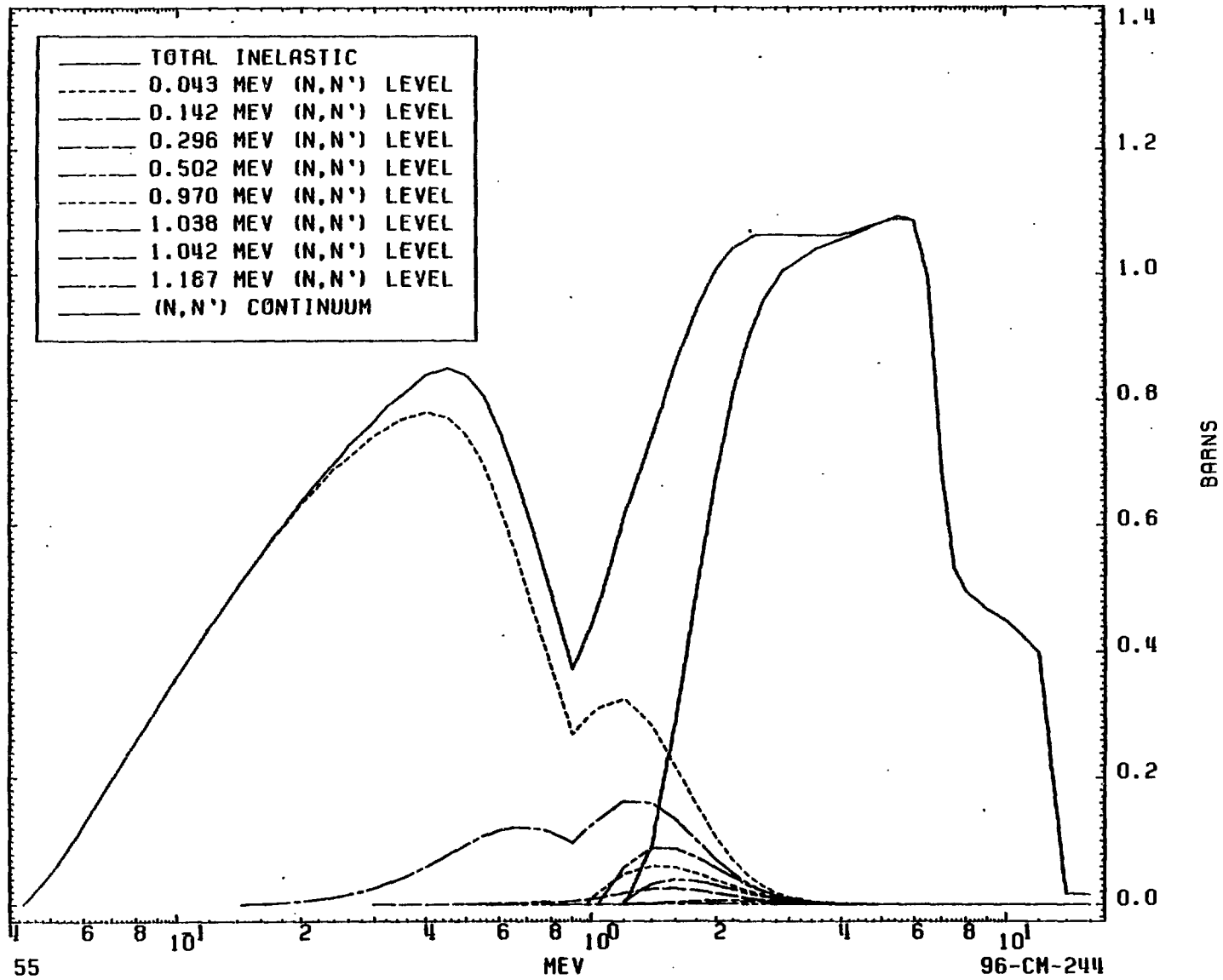
96-CM-244

40

MAT 9644

CROSS SECTIONS

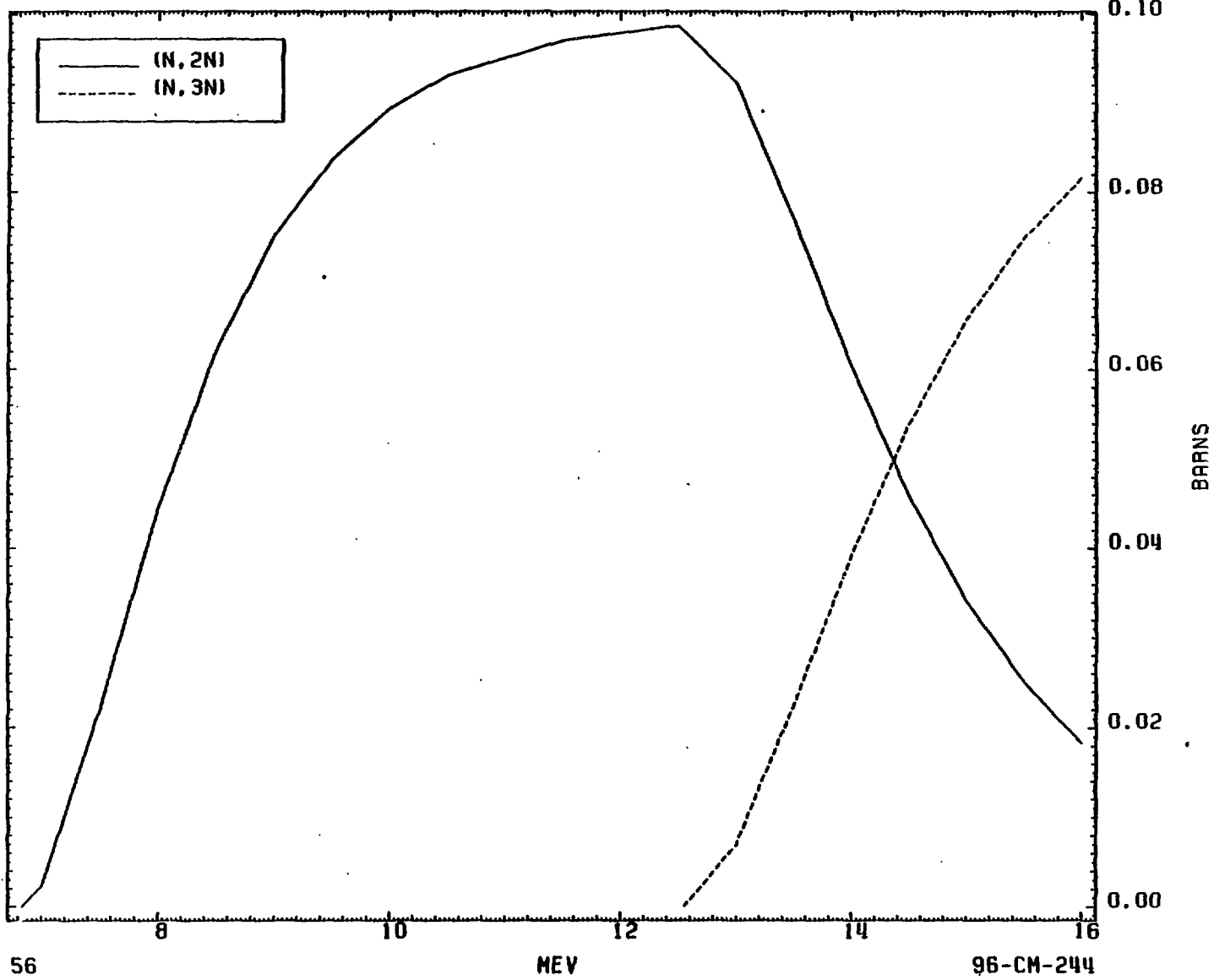
96-CM-244

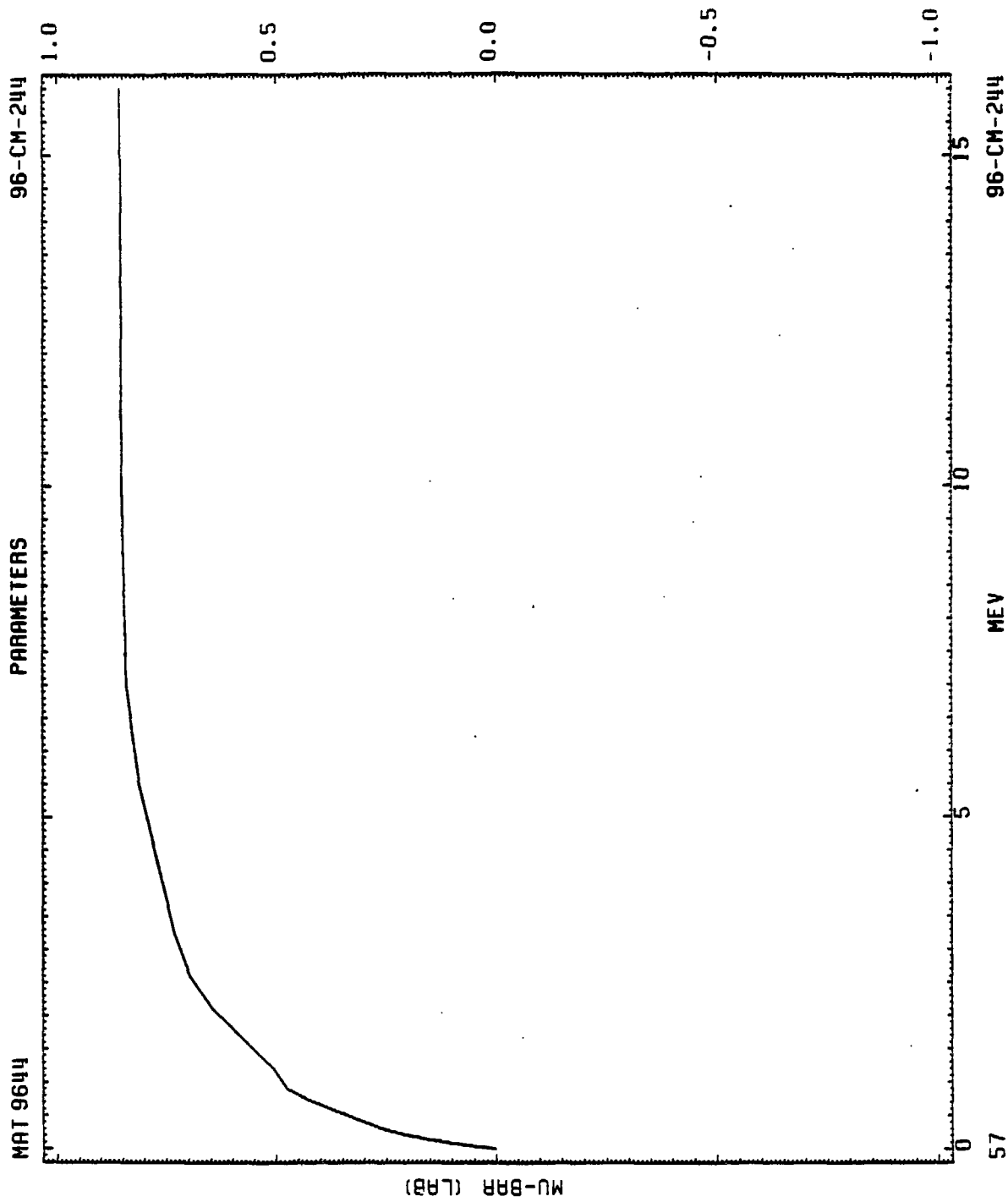


MAT 9644

CROSS SECTIONS

96-CM-244

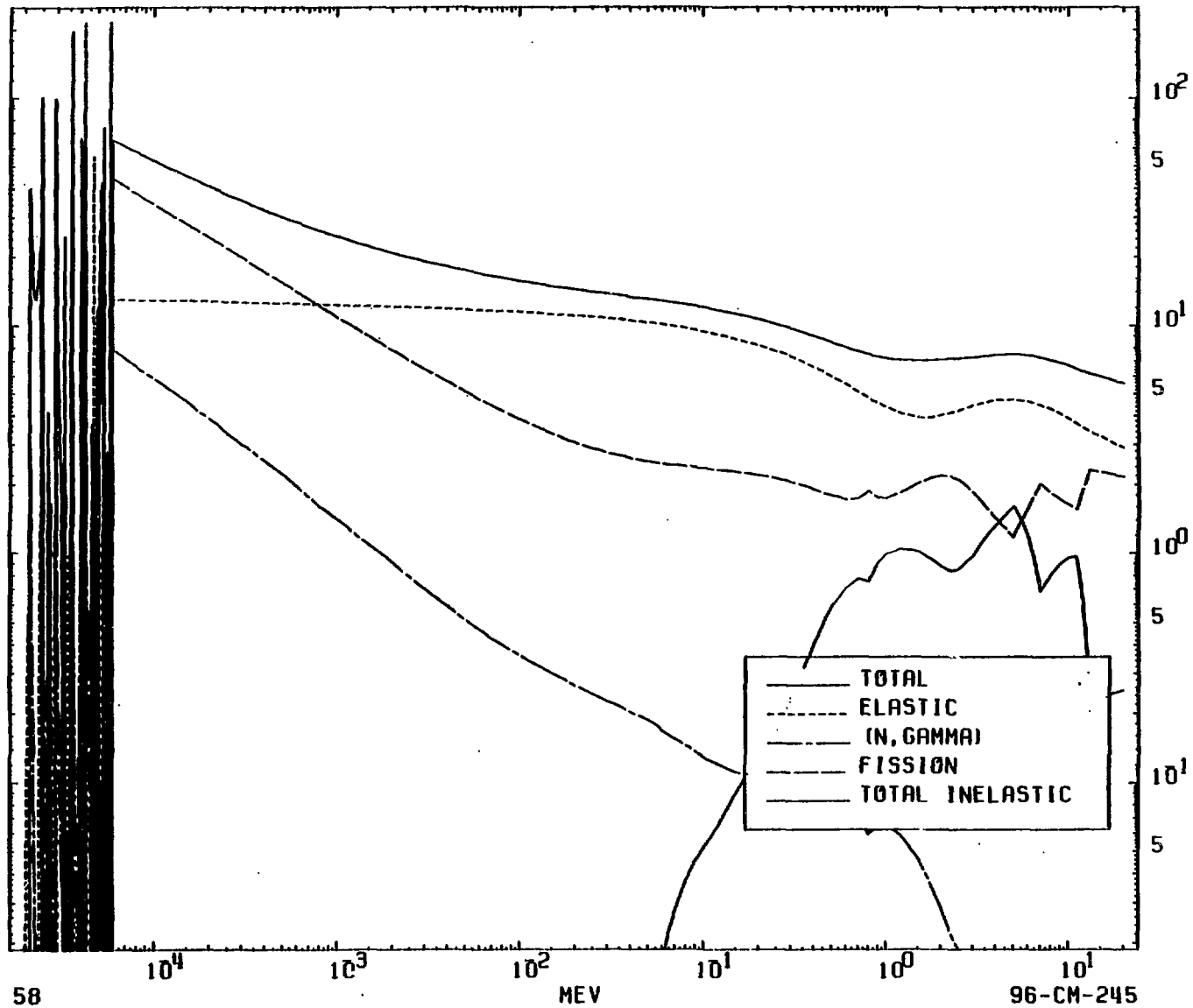




MAT 9645

CROSS SECTIONS

96-CM-245



58

MEV

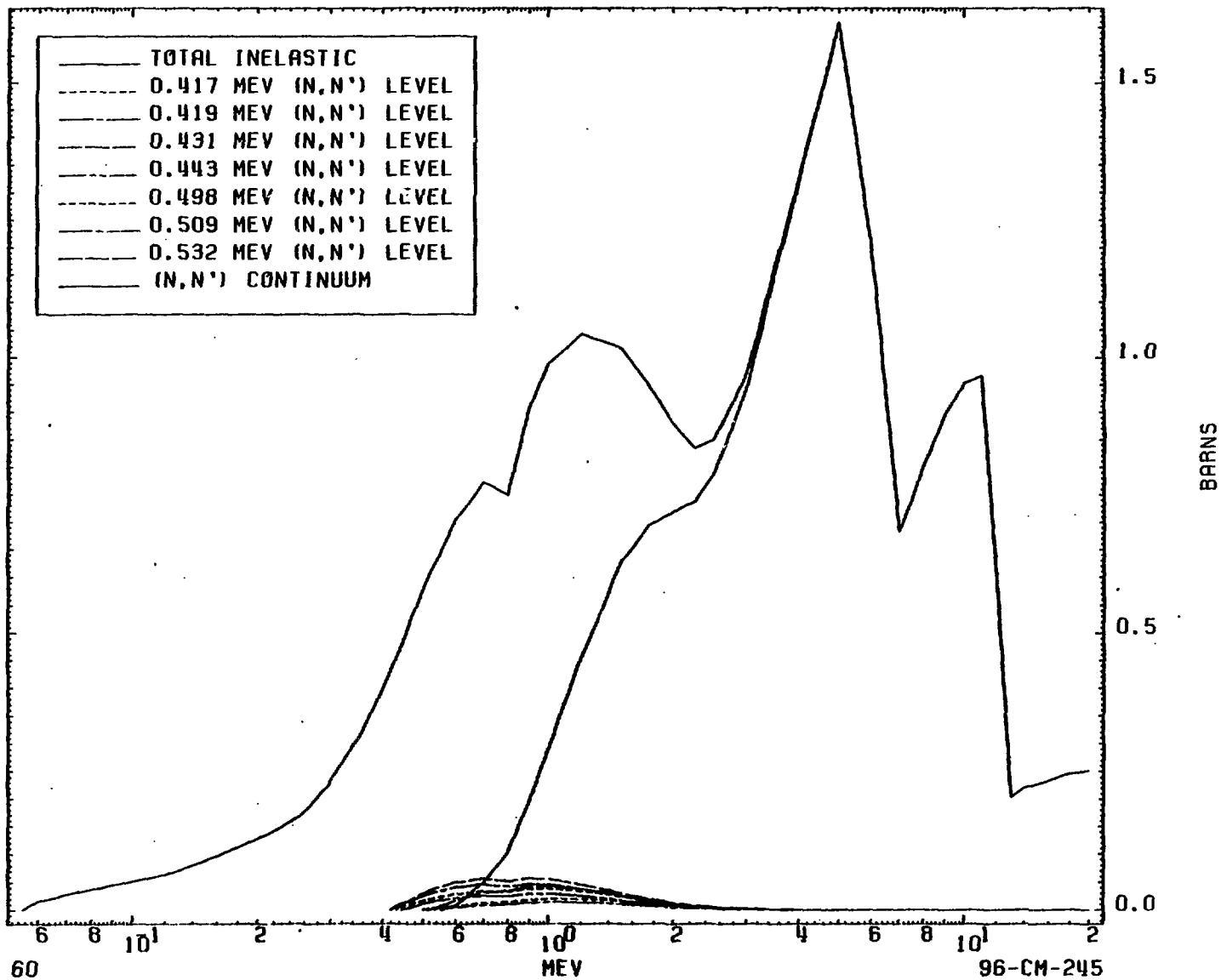
96-CM-245

BARNS

MAT 9645

CROSS SECTIONS

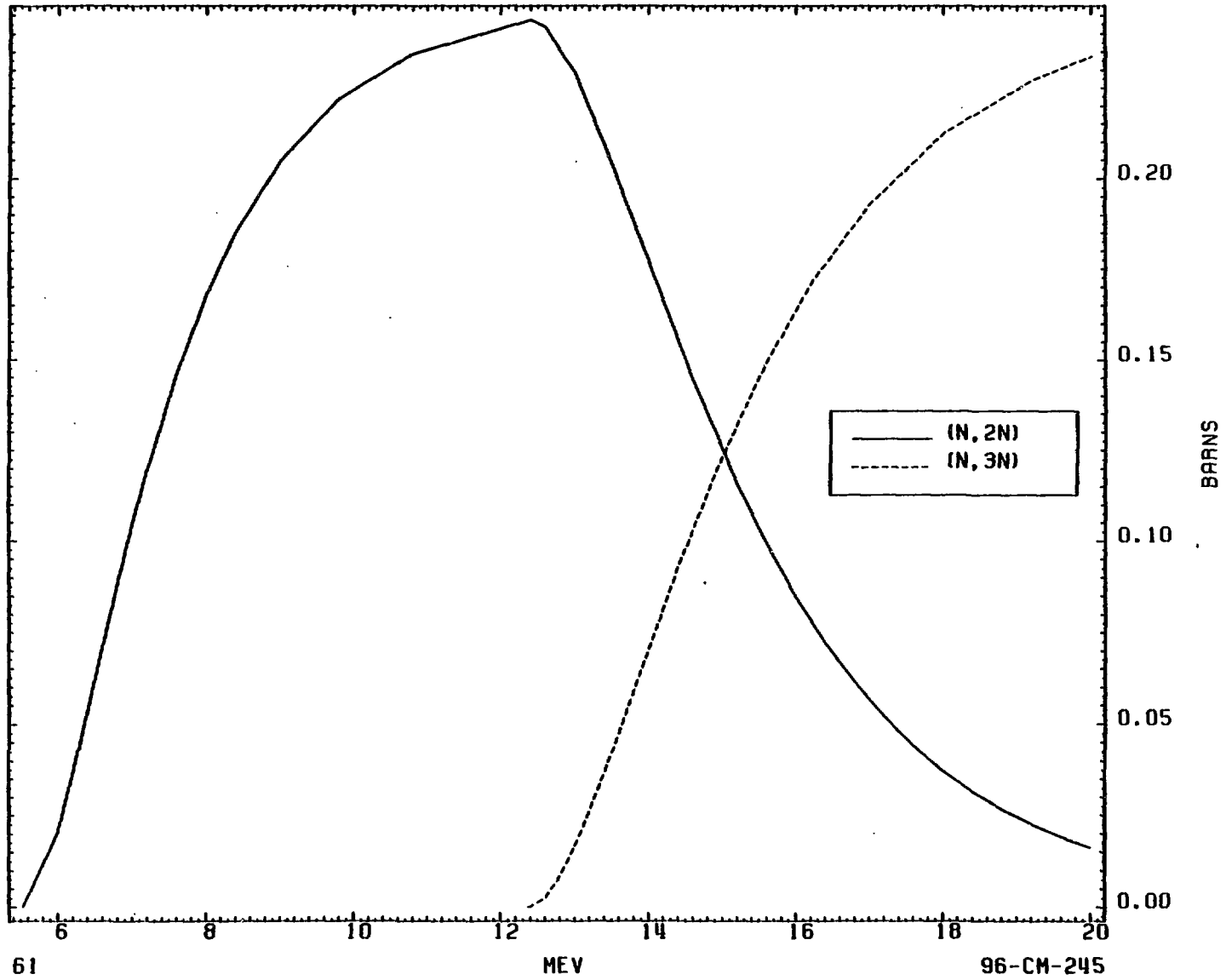
96-CM-245



MAT 9645

CROSS SECTIONS

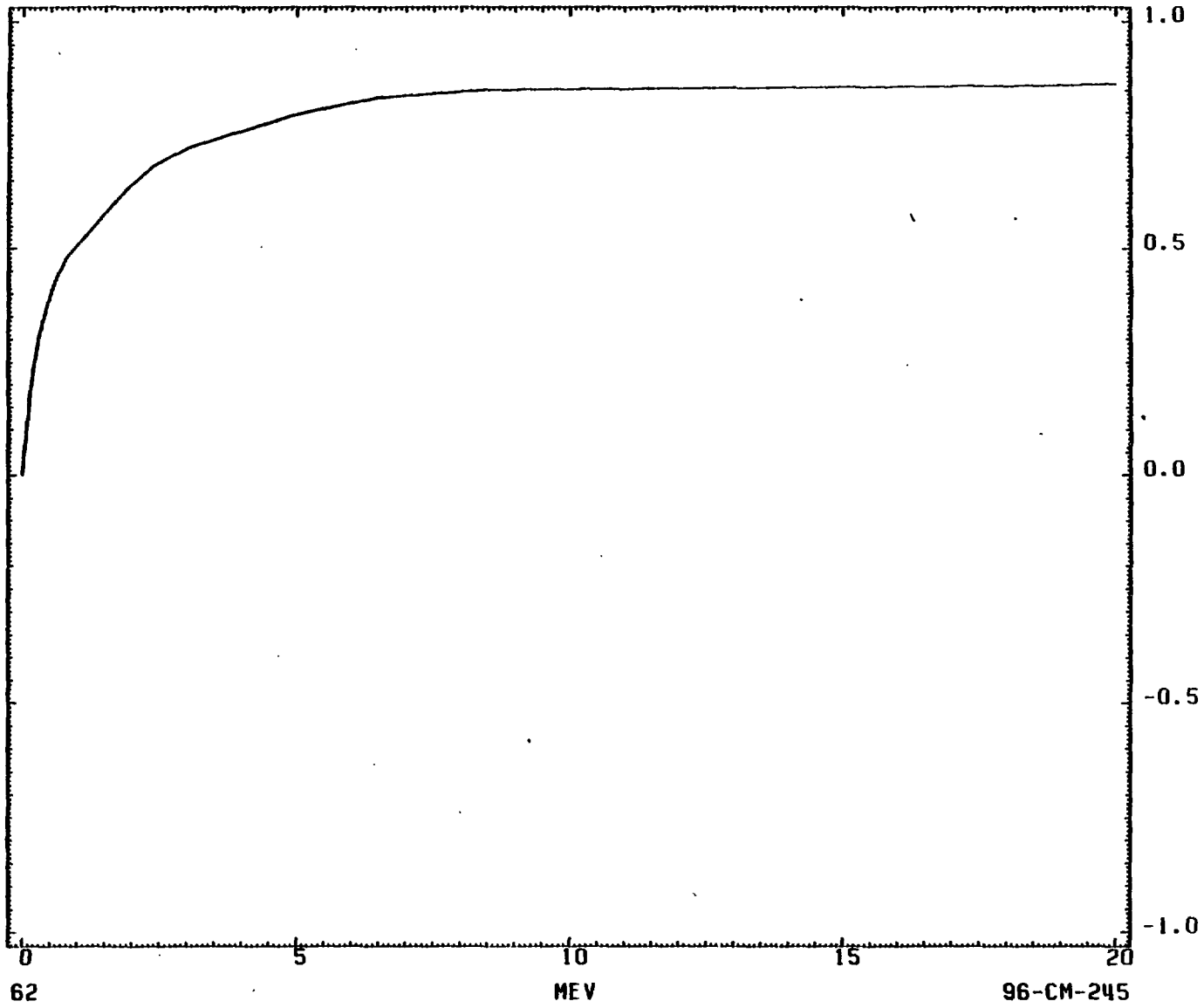
96-CM-245



MAT 9645

PARAMETERS

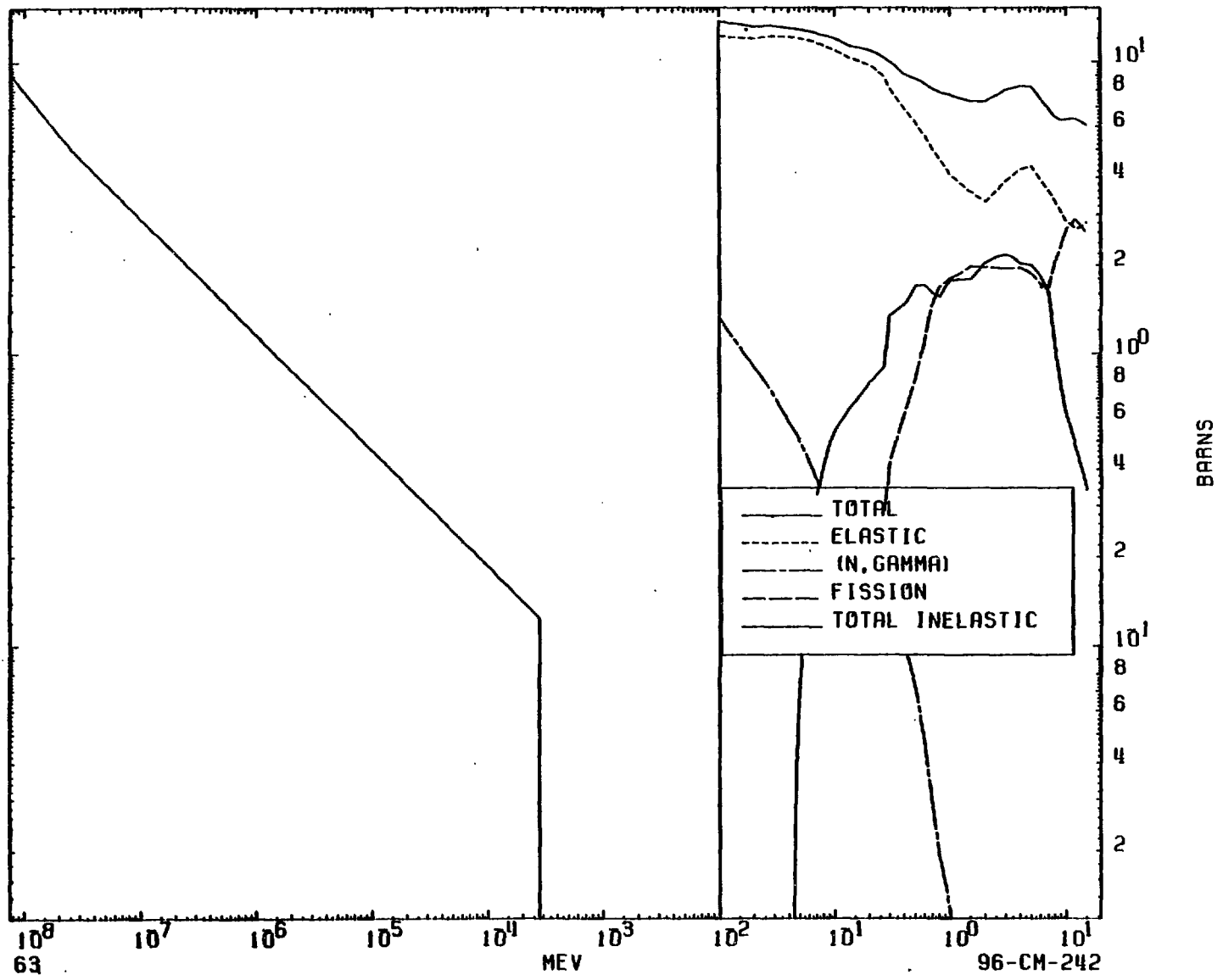
96-CM-245



MAT 9662

CROSS SECTIONS

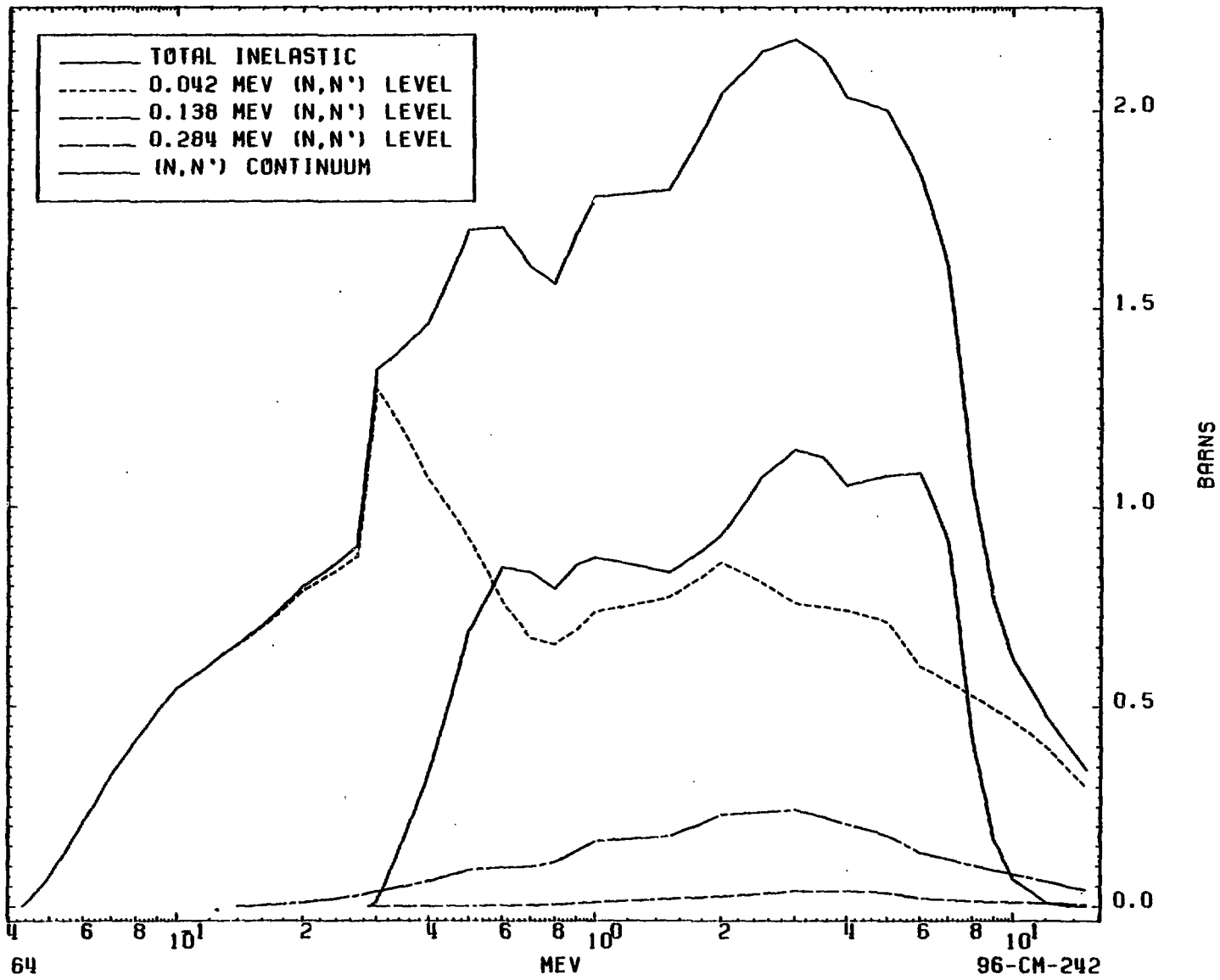
96-CM-242



MAT 9662

CROSS SECTIONS

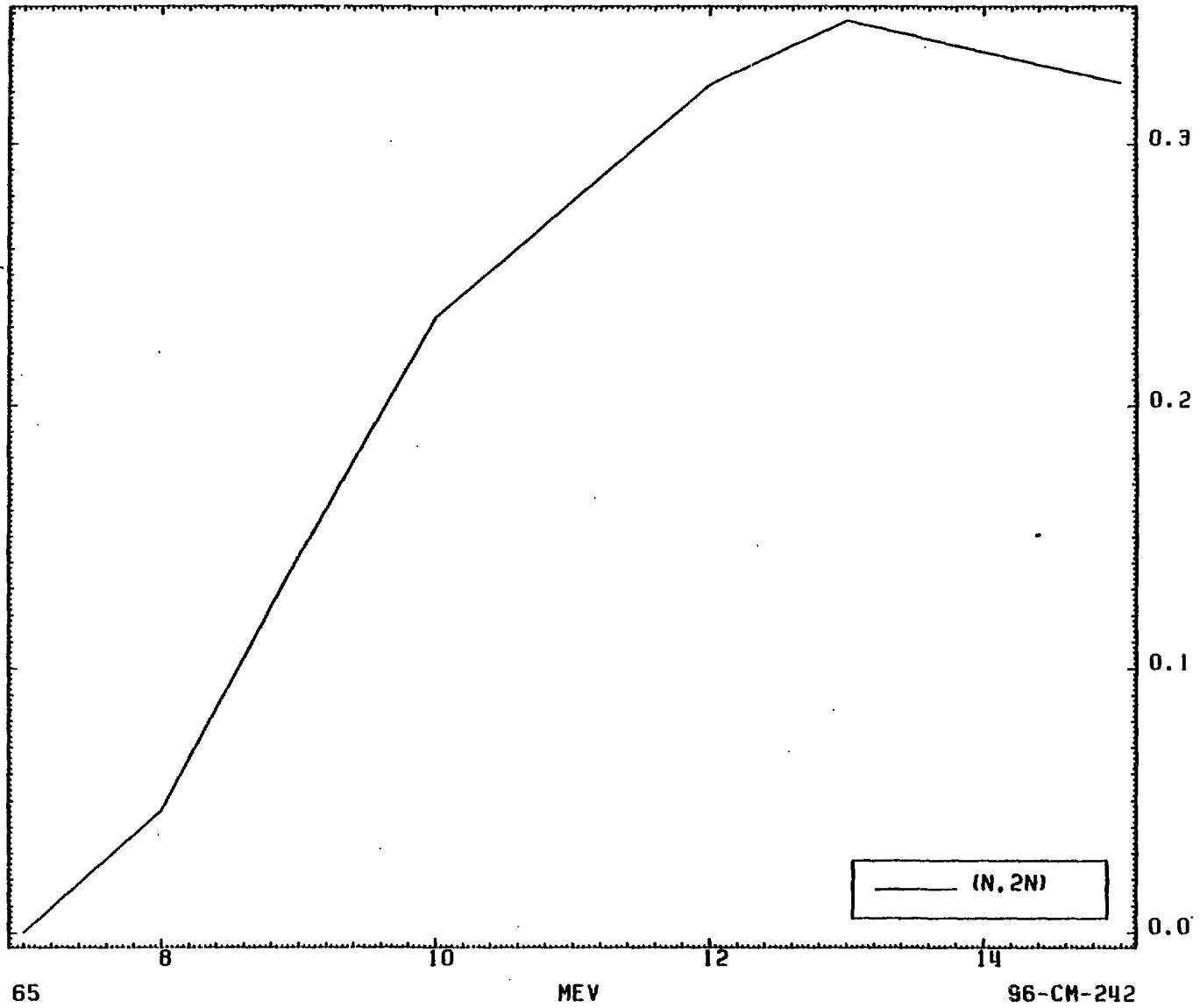
96-CM-242



MAT 9662

CROSS SECTIONS

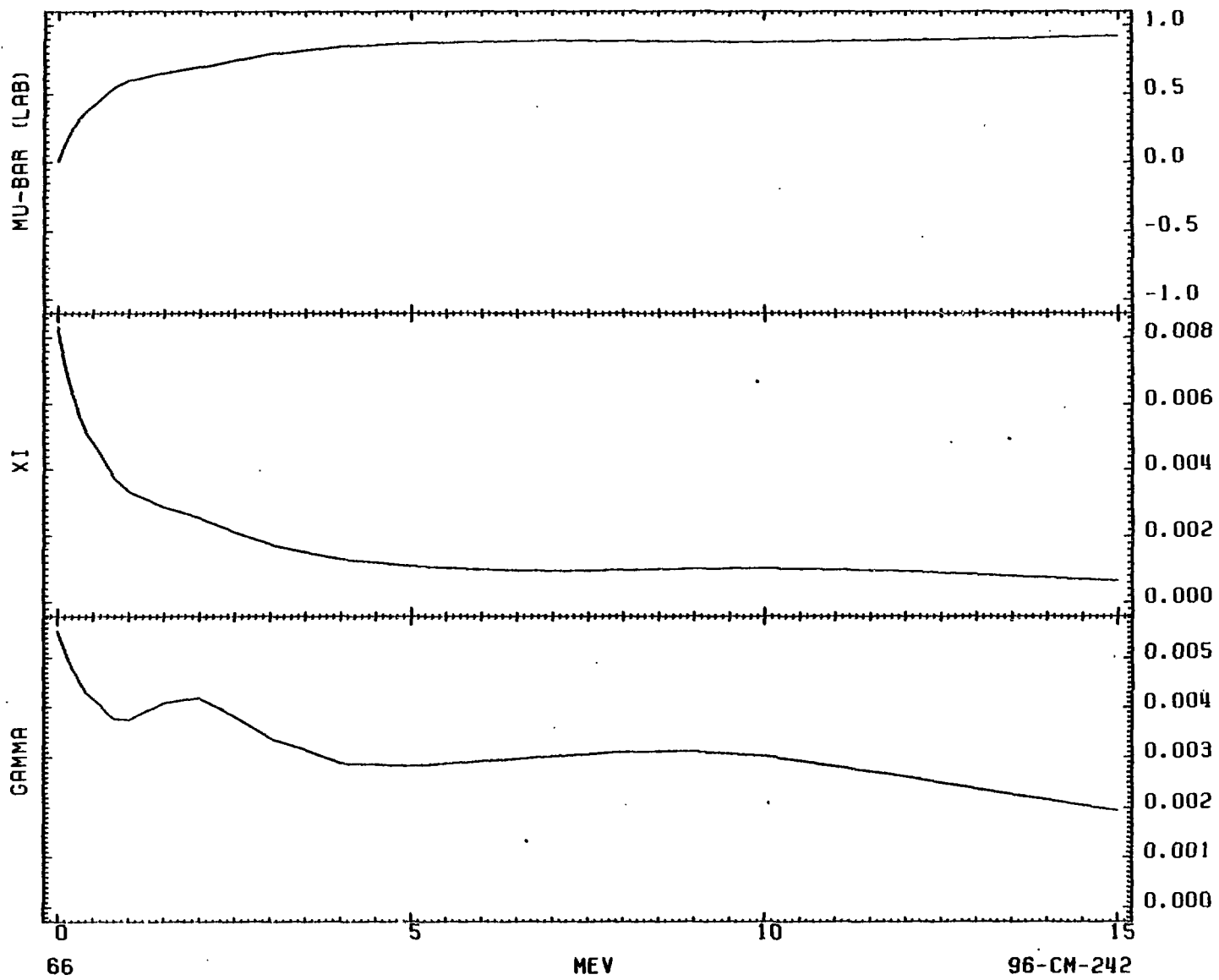
96-CM-242



MAT 9662

PARAMETERS

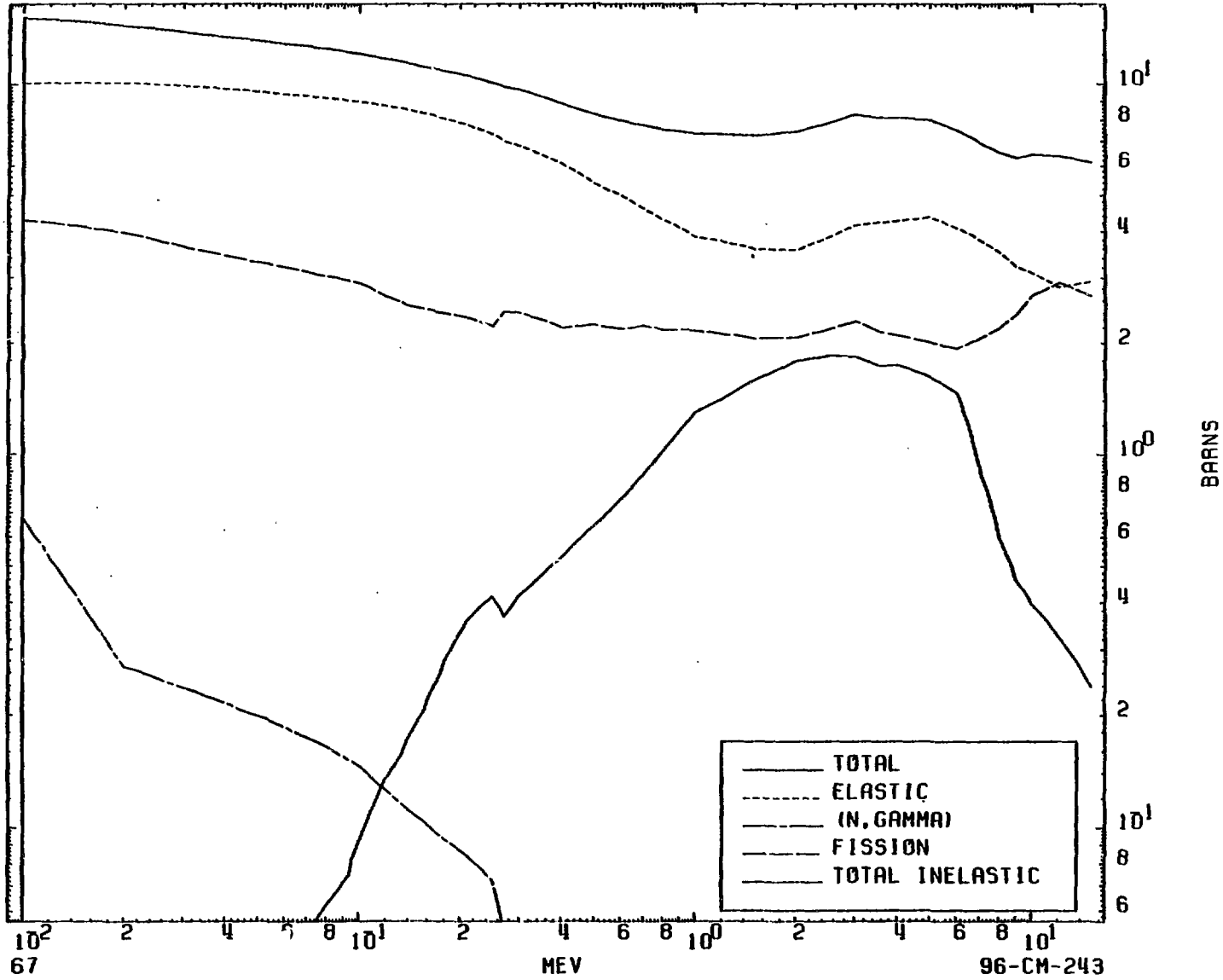
96-CM-242



MAT 9663

CROSS SECTIONS

96-CM-243

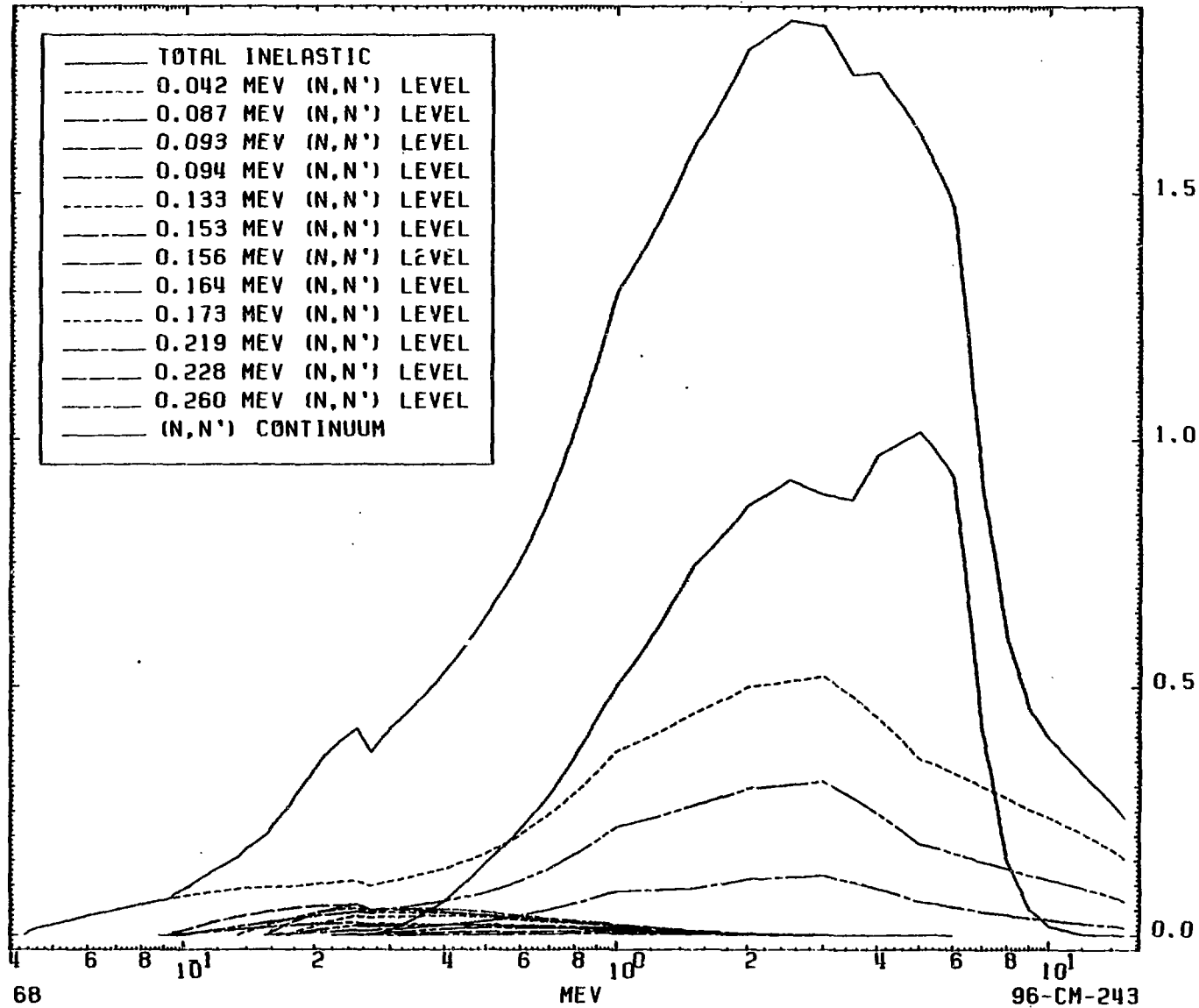


— TOTAL
- - - ELASTIC (N, GAMMA)
- · - FISSON
- - - TOTAL INELASTIC

67

MEV

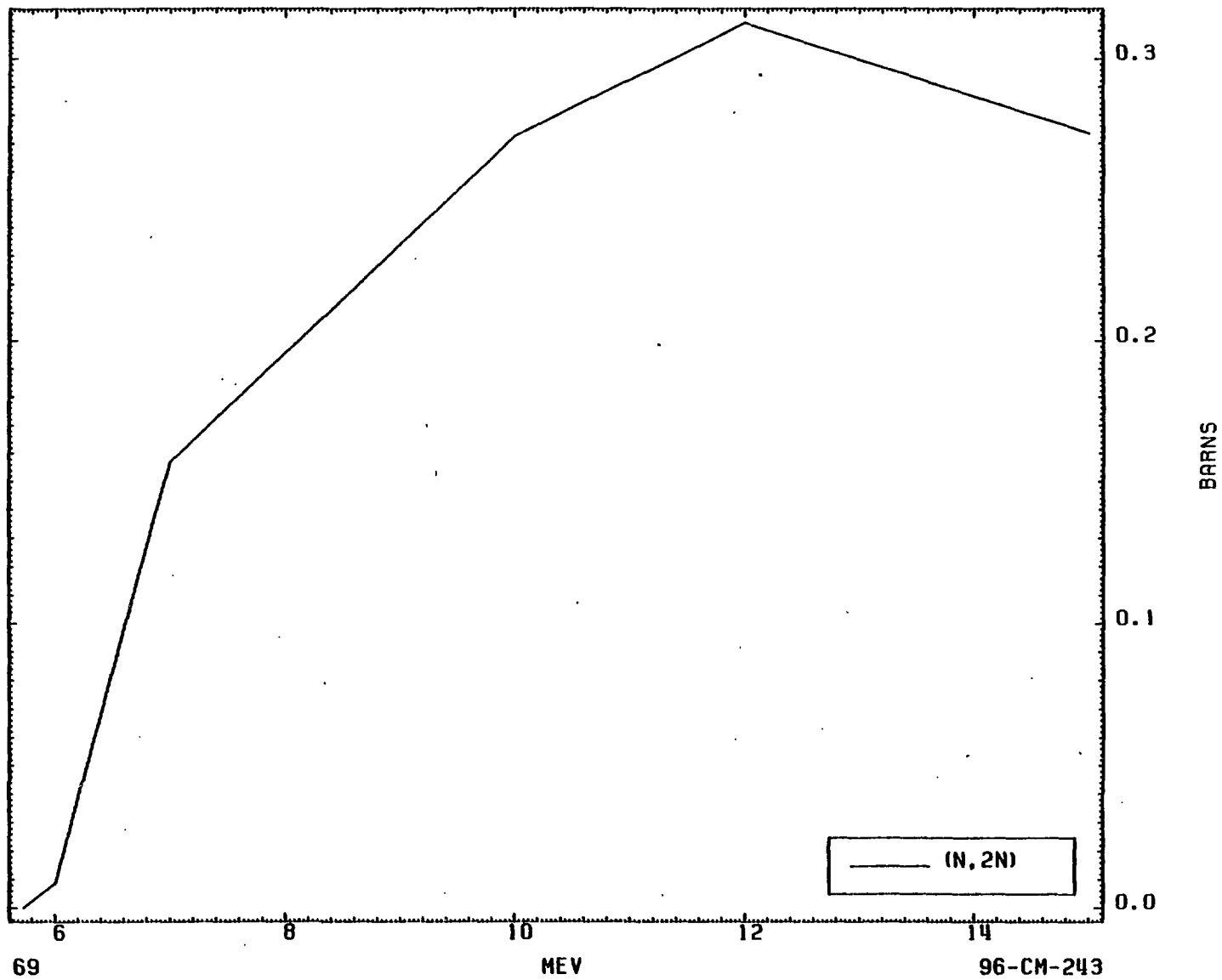
96-CM-243



MAT 9665

CROSS SECTIONS

96-CM-243



69

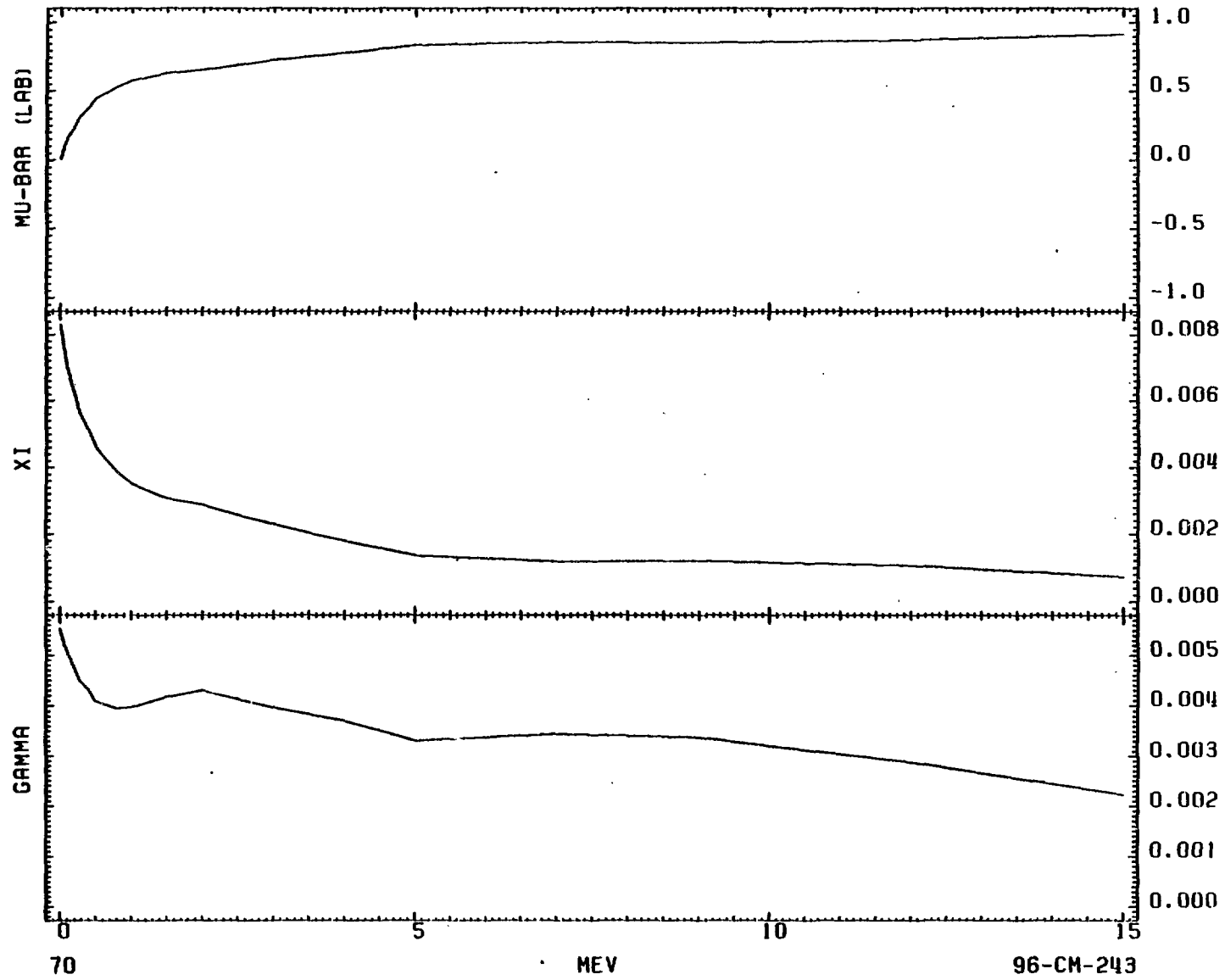
MEV

96-CM-243

MAT 9663

PARAMETERS

96-CM-243



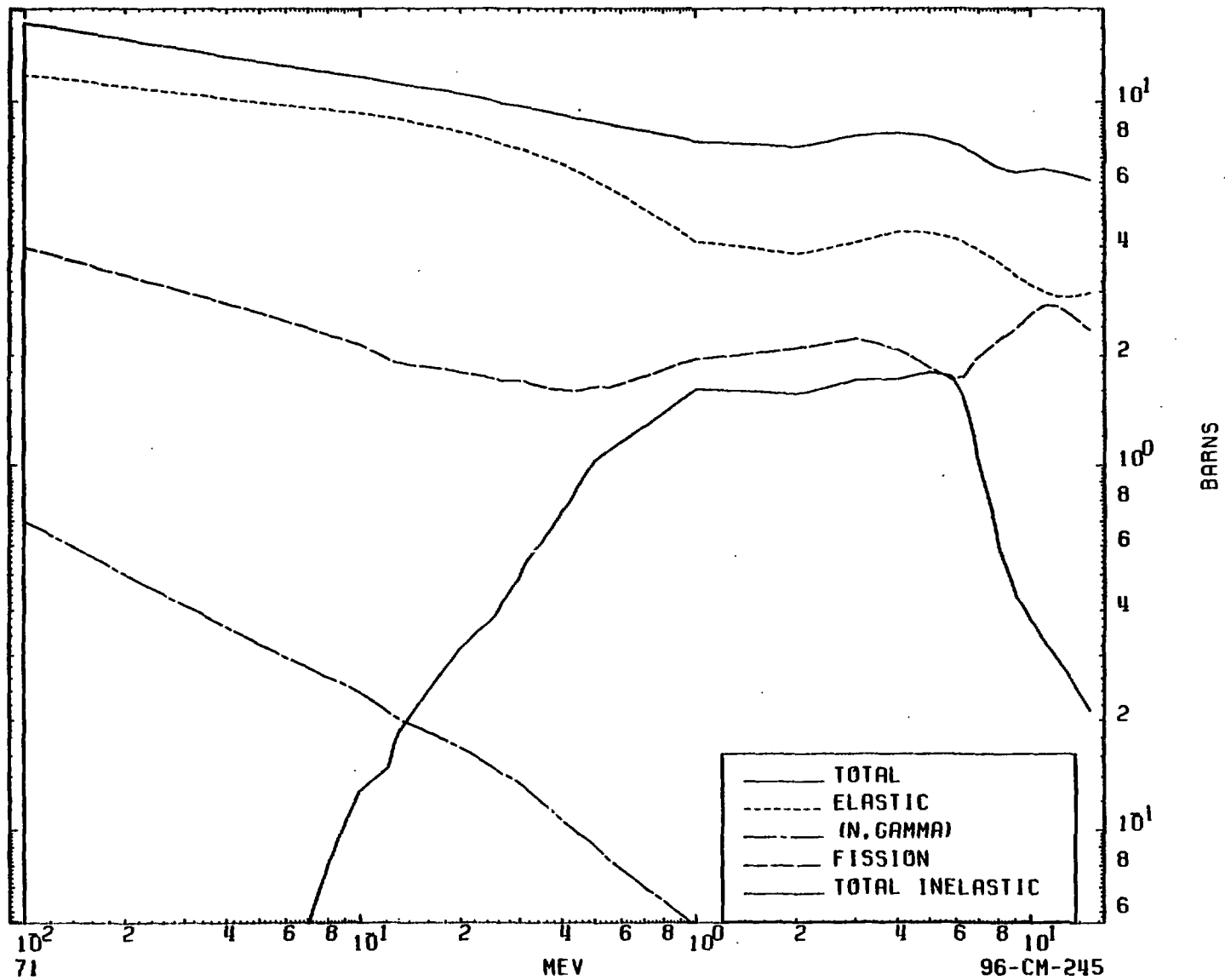
MAT

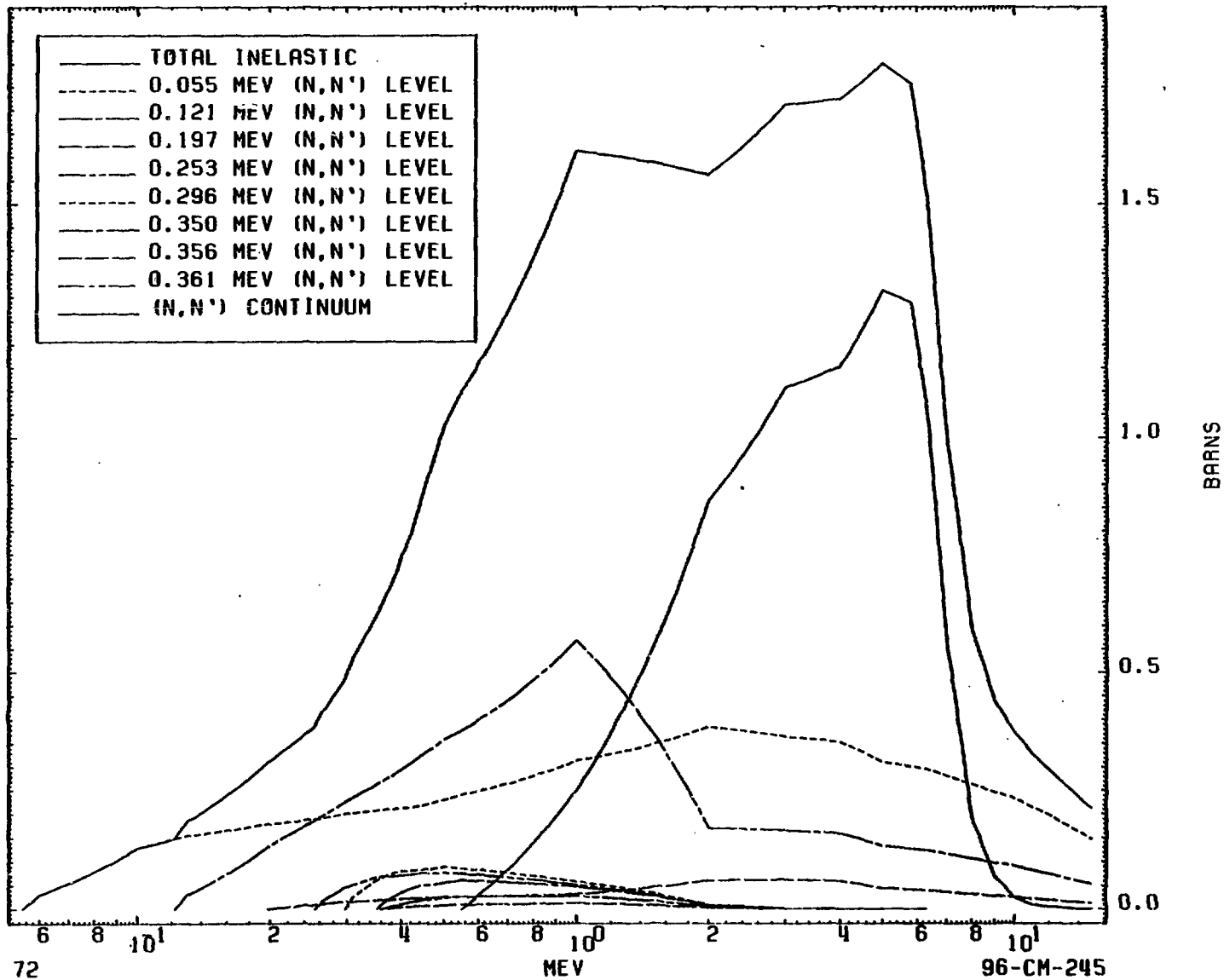
58

MAT 9665

CROSS SECTIONS

96-CM-245

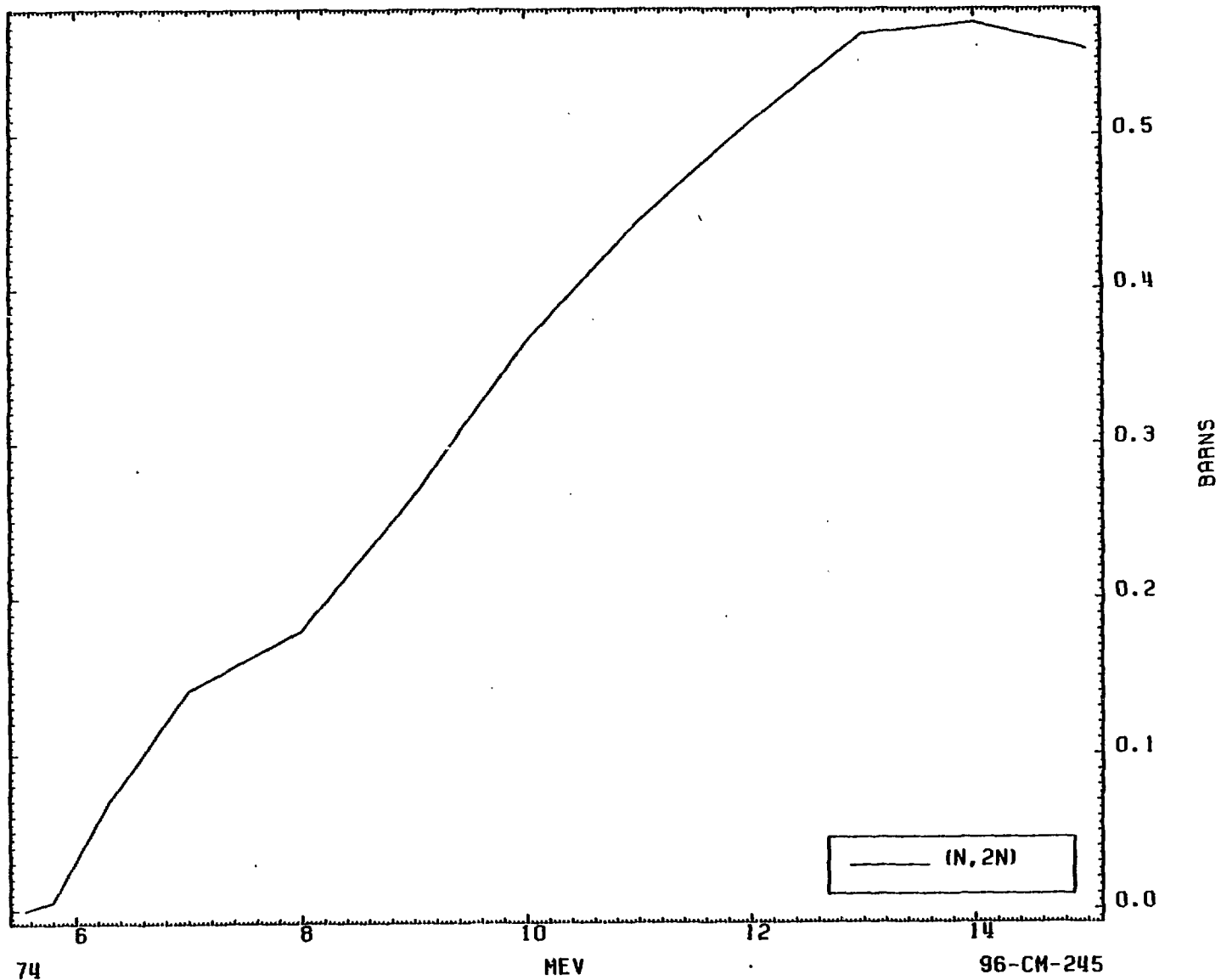




MAT 9665

CROSS SECTIONS

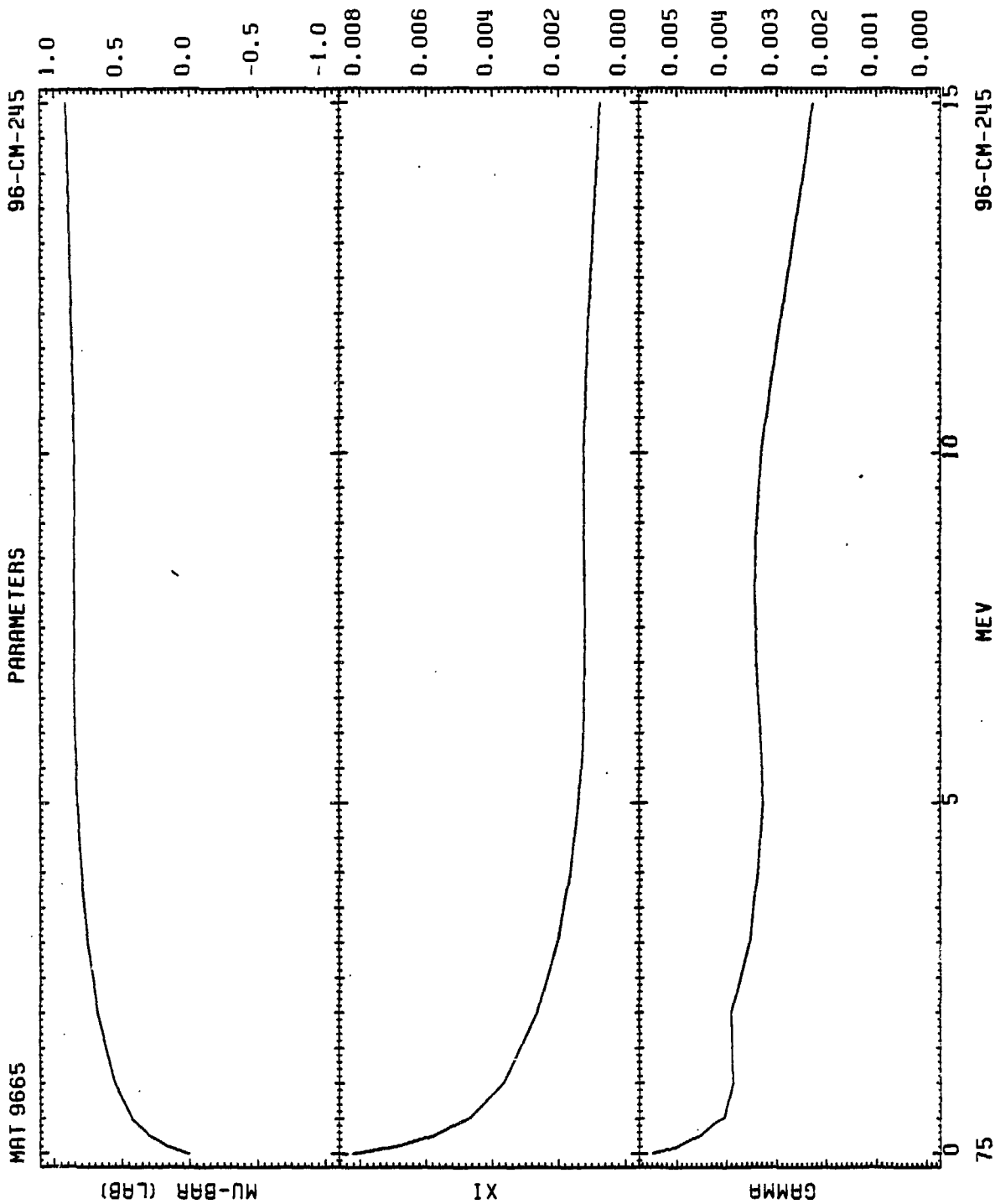
96-CM-245



74

MEV

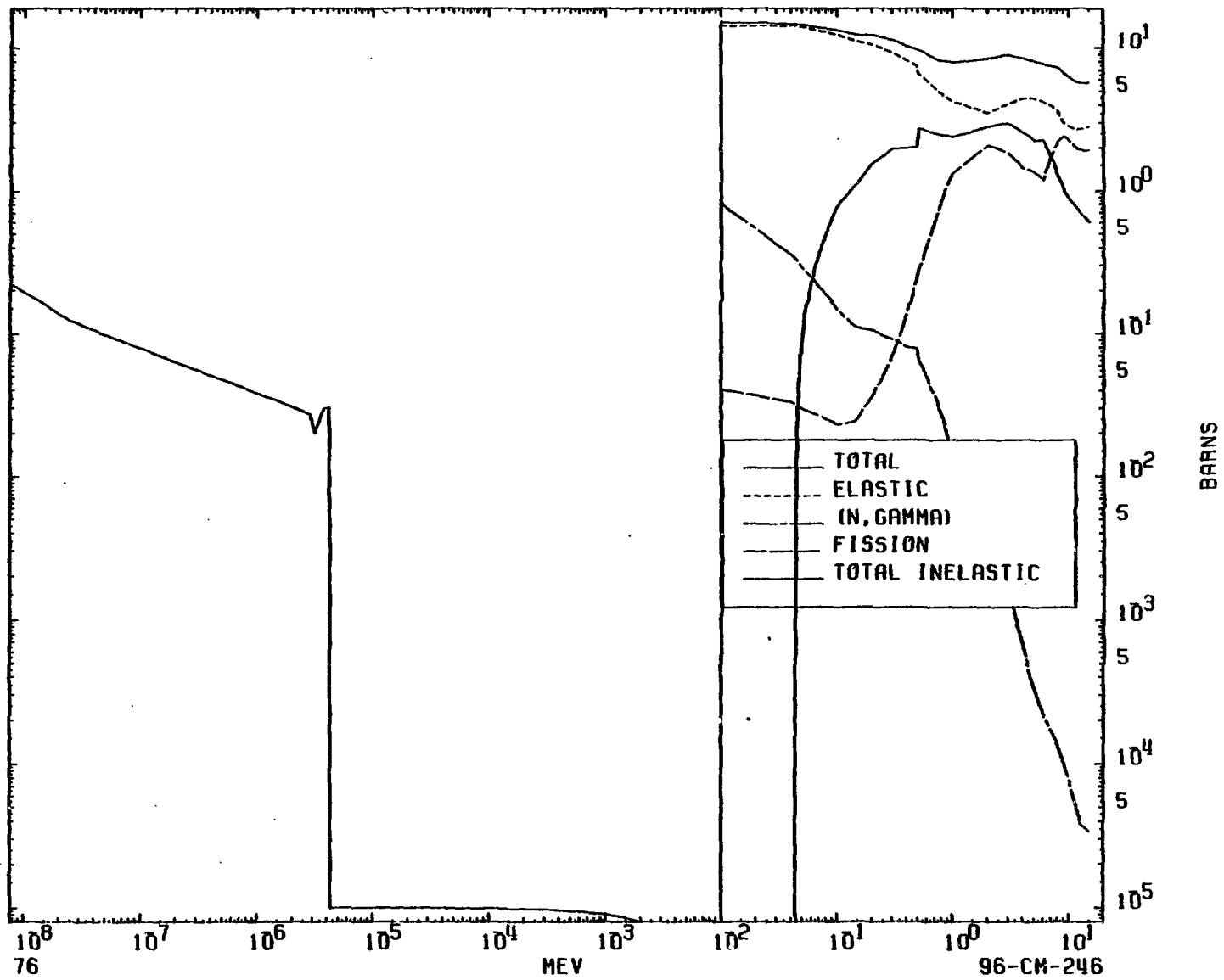
96-CM-245



MAT 9666

CROSS SECTIONS

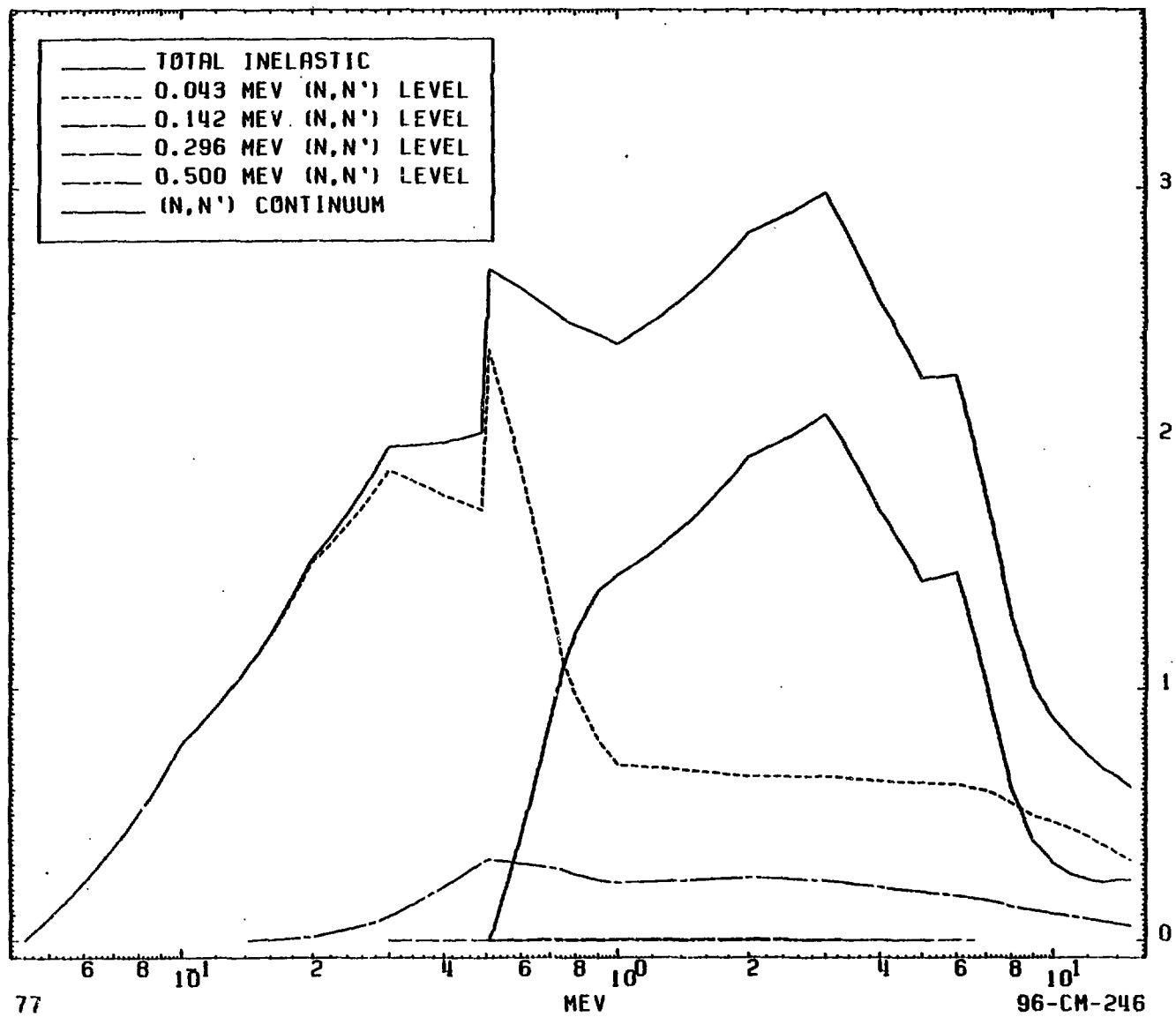
96-CM-246



MAT 9666

CROSS SECTIONS

96-CM-246



BARNs

77

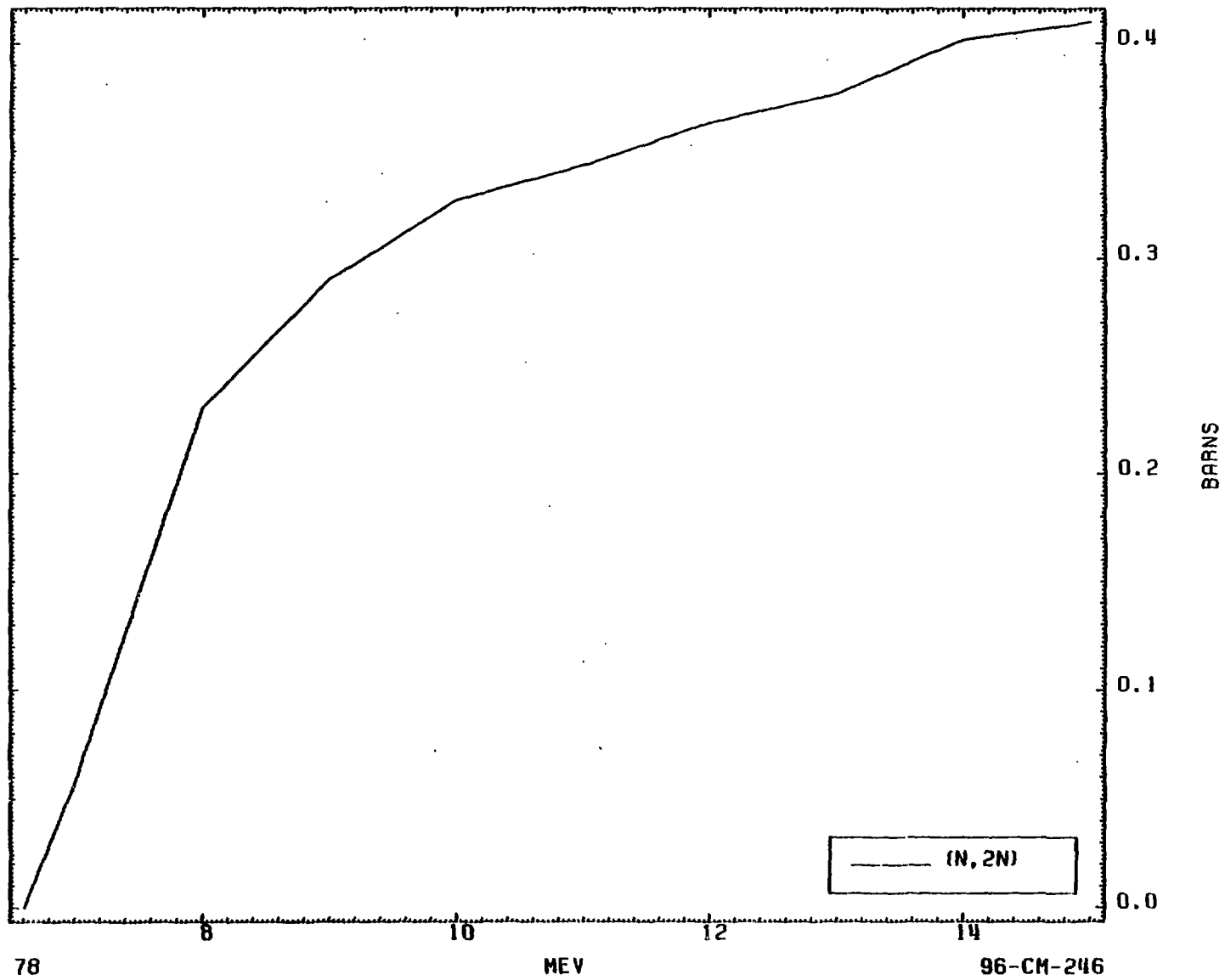
MEV

96-CM-246

MAT 9666

CROSS SECTIONS

96-CM-246



(N, 2N)

78

MEV

96-CM-246

MAT 9666

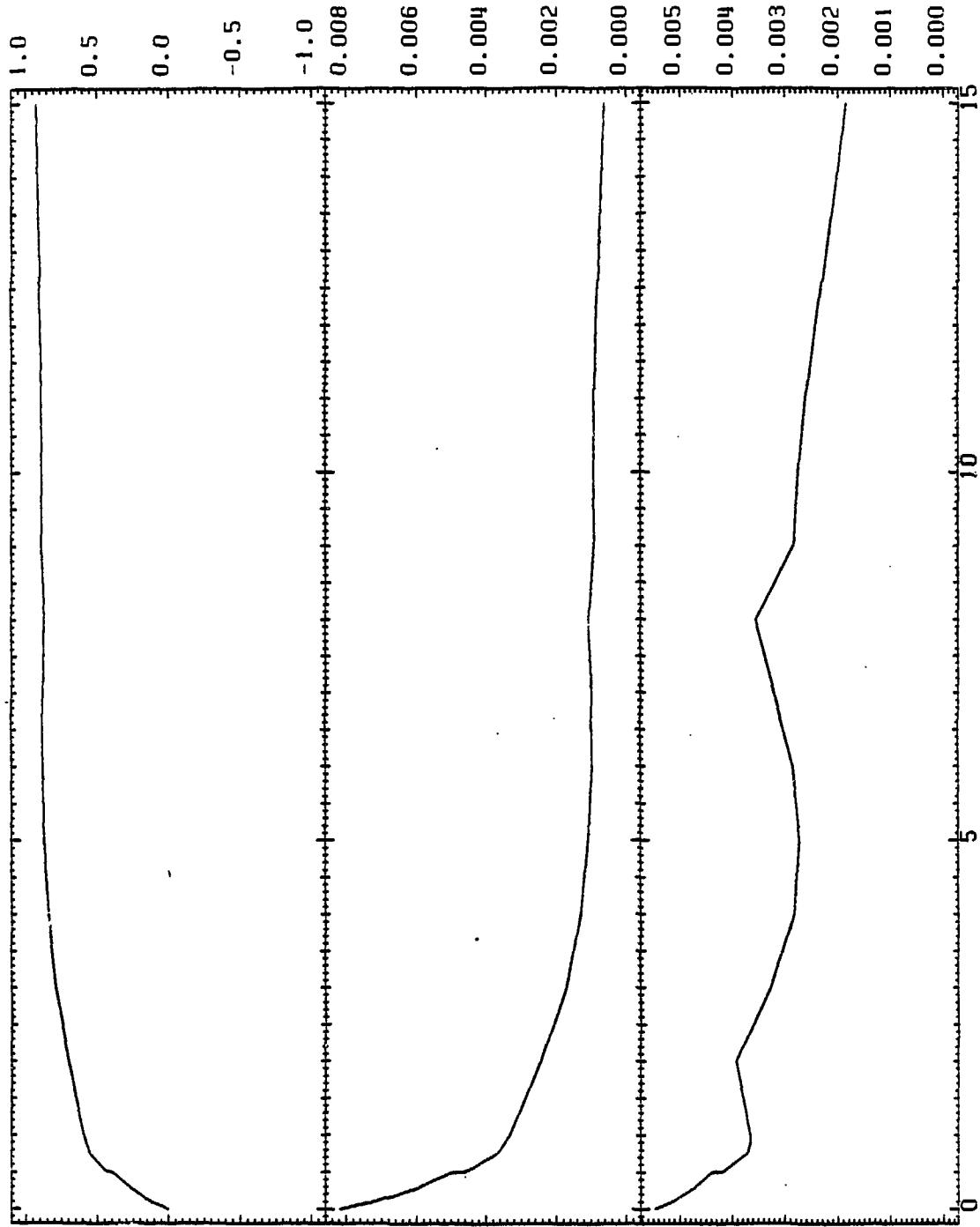
PARAMETERS

96-CM-246

MU-BAR (LBB)

XI

GRMMA



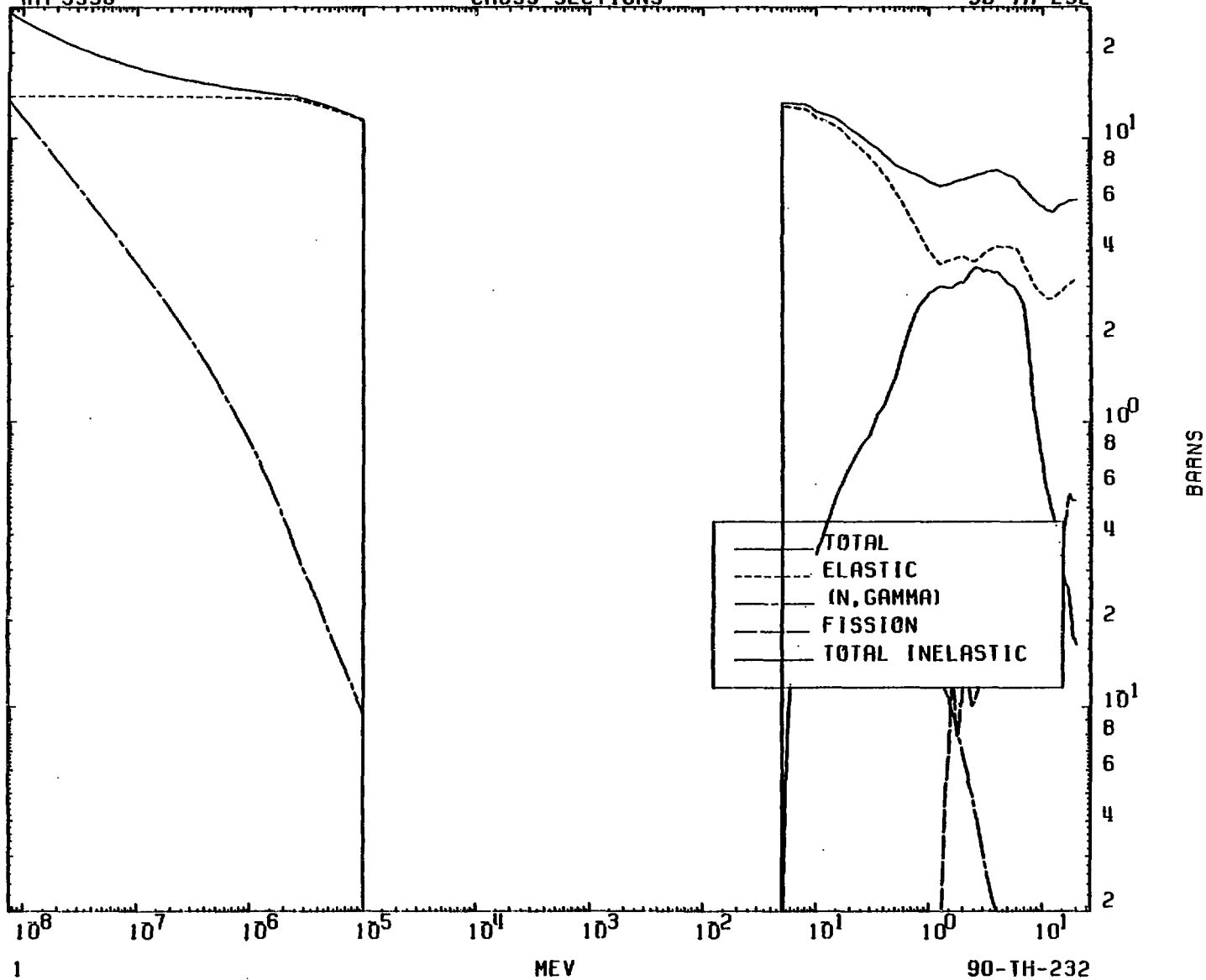
MEV

96-CM-243

MAT 9990

CROSS SECTIONS

90-TH-232



1

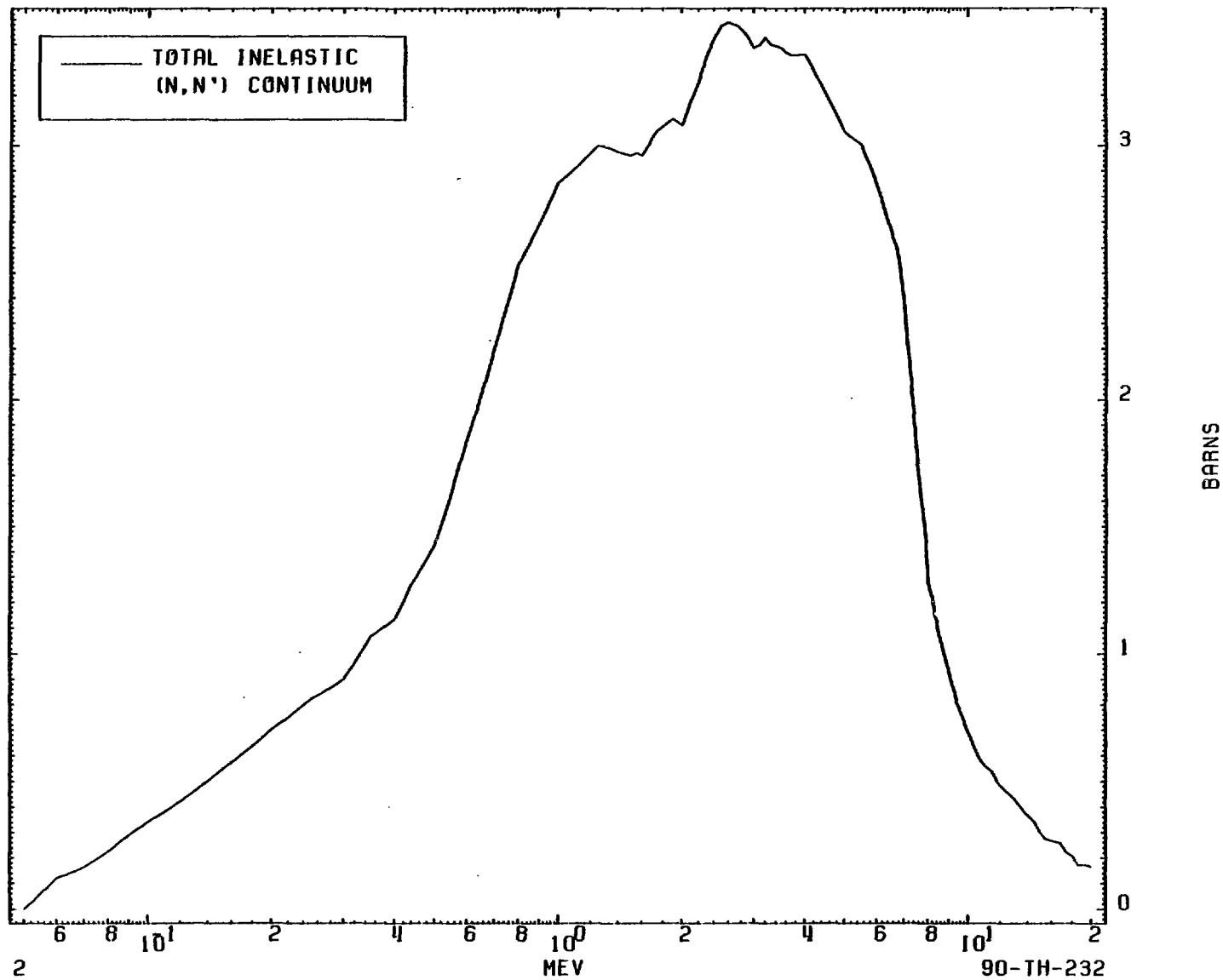
MEV

90-TH-232

MAT 9990

CROSS SECTIONS

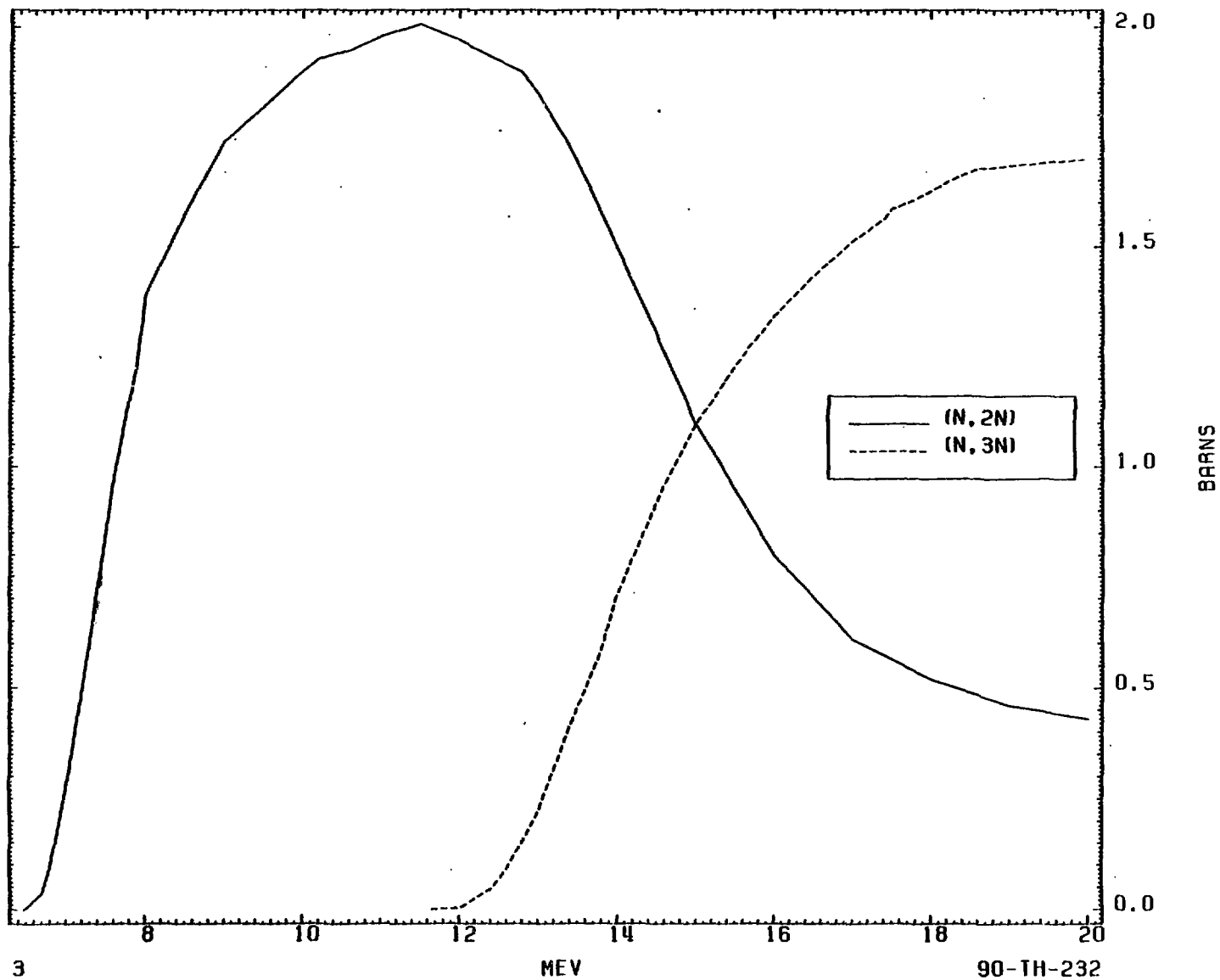
90-TH-232



MAT 9990

CROSS SECTIONS

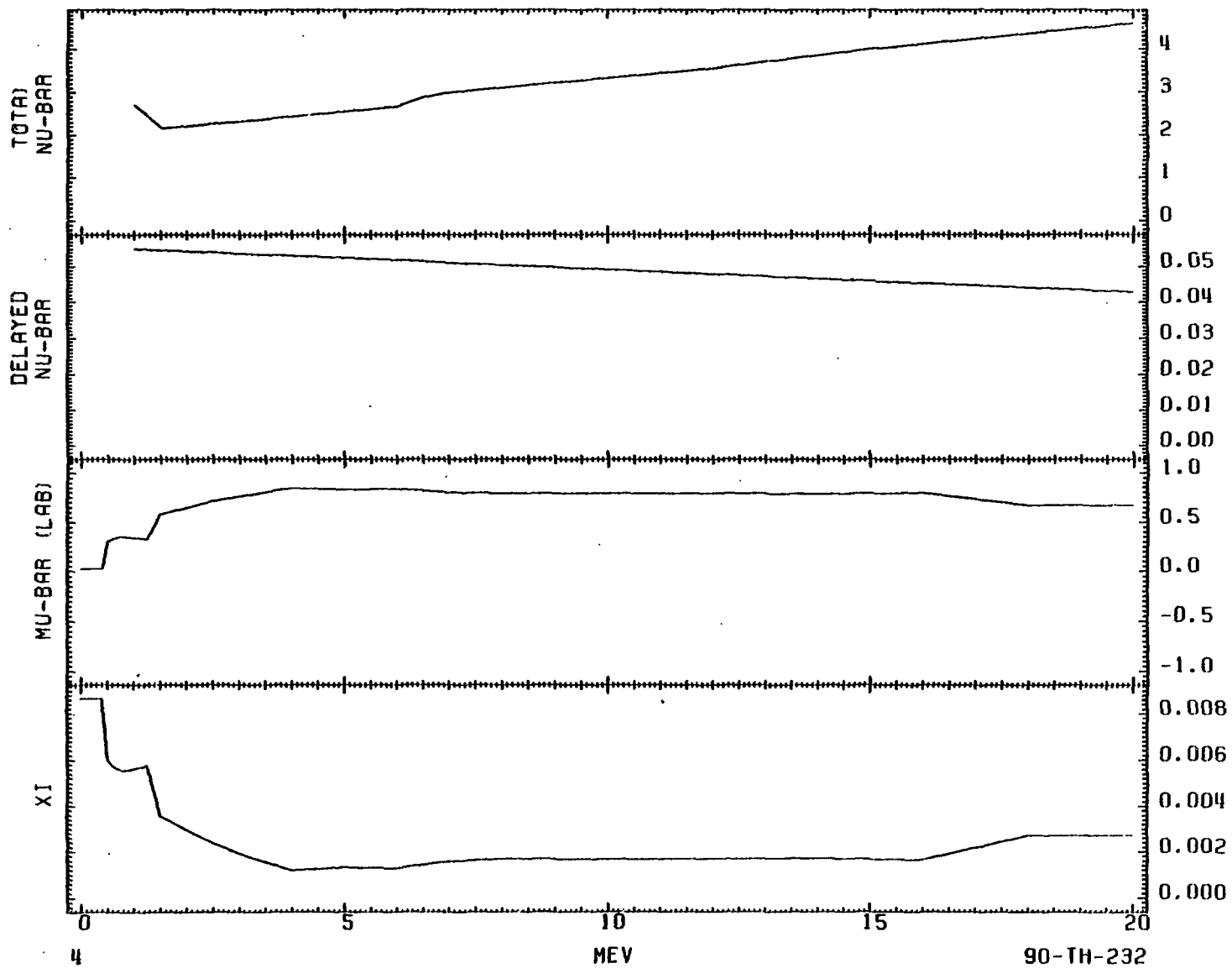
90-TH-232



MAT 9990

PARAMETERS

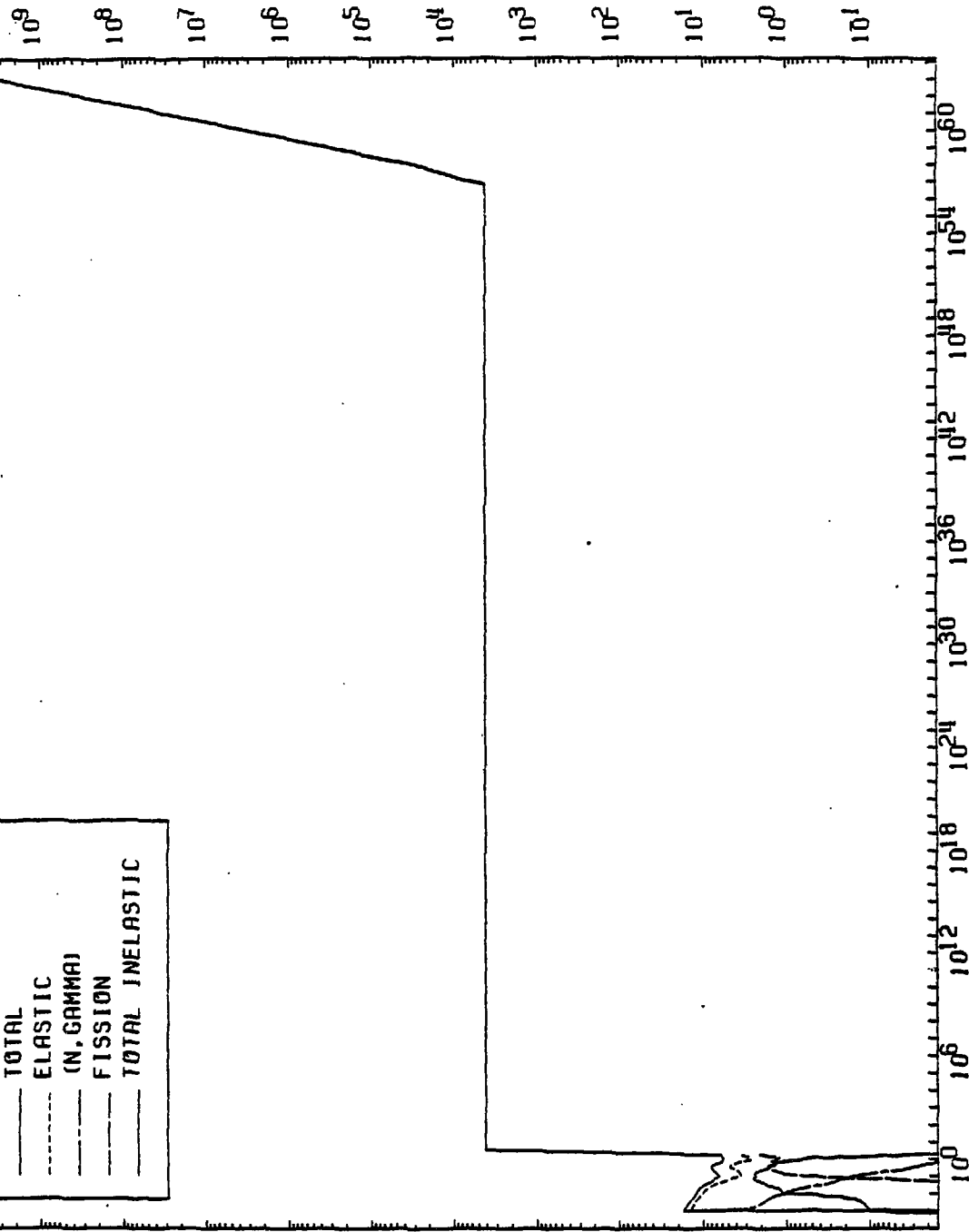
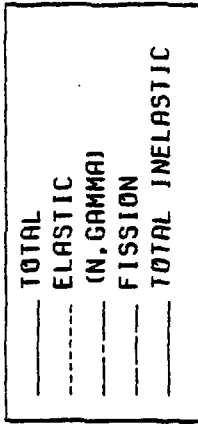
90-TH-232



MAT 9993

CROSS SECTIONS

91-PA-233



BRRNS

SI 848 135

1

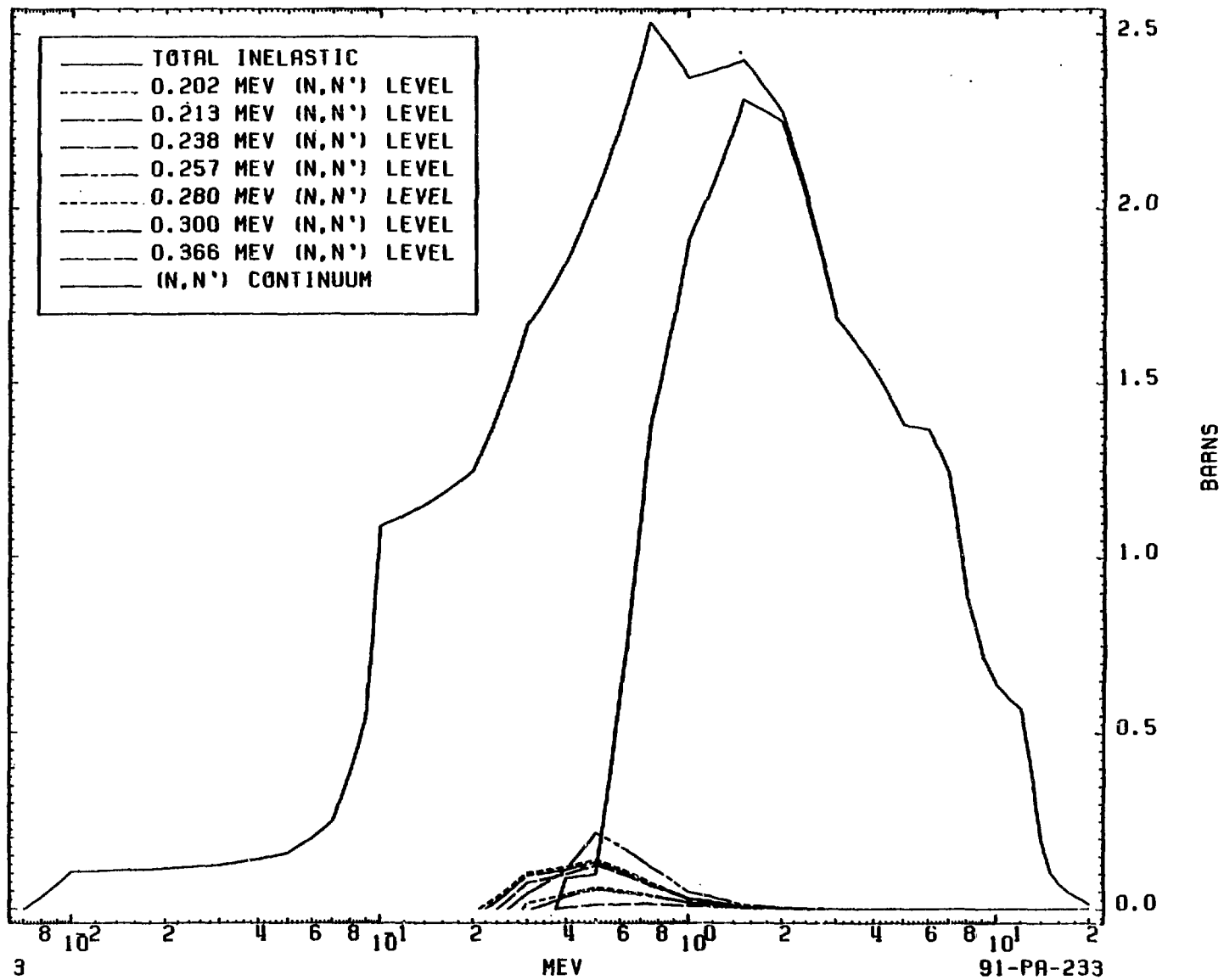
MEV

91-PA-233

MAT 9993

CROSS SECTIONS

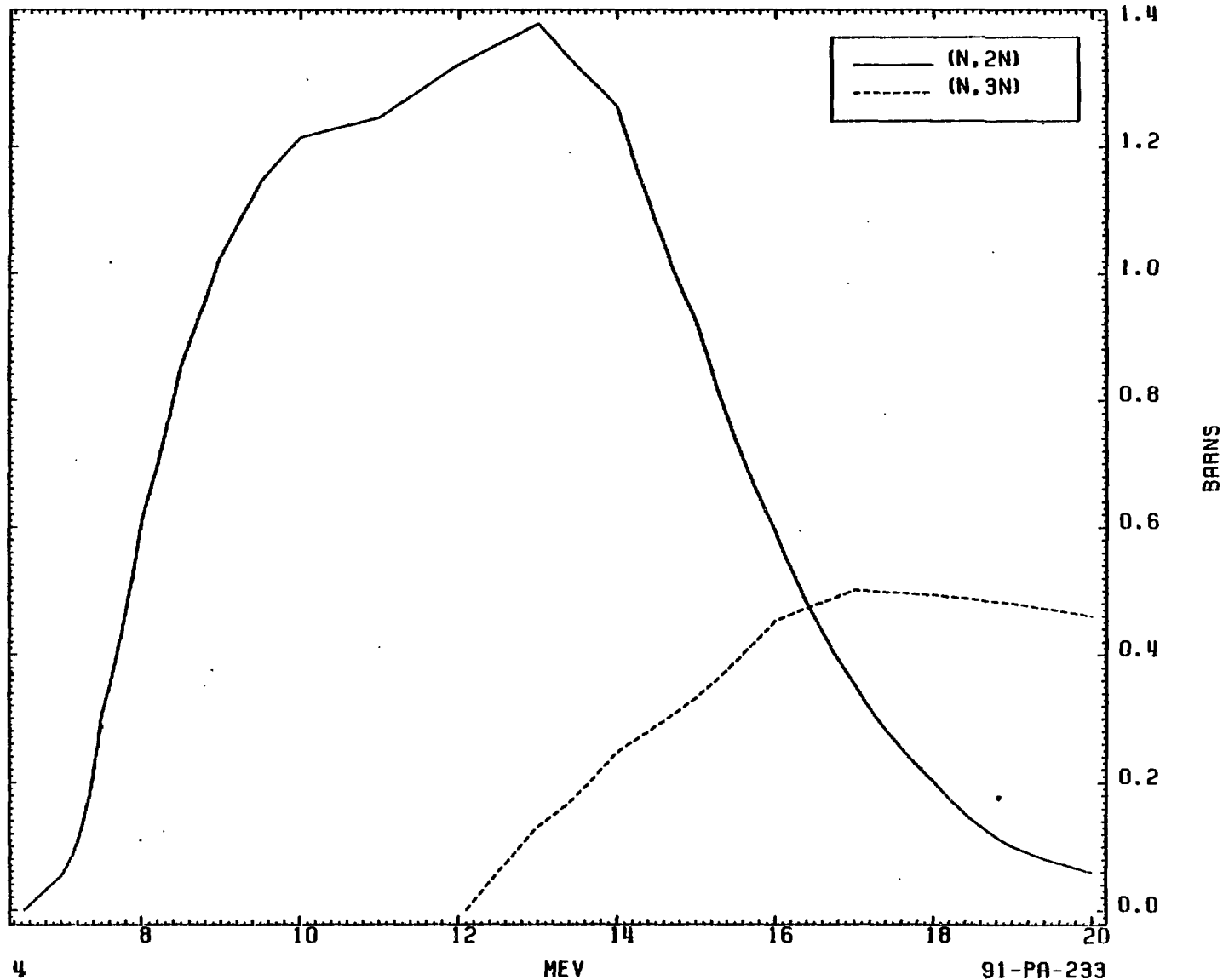
91-PA-233



MAT 9993

CROSS SECTIONS

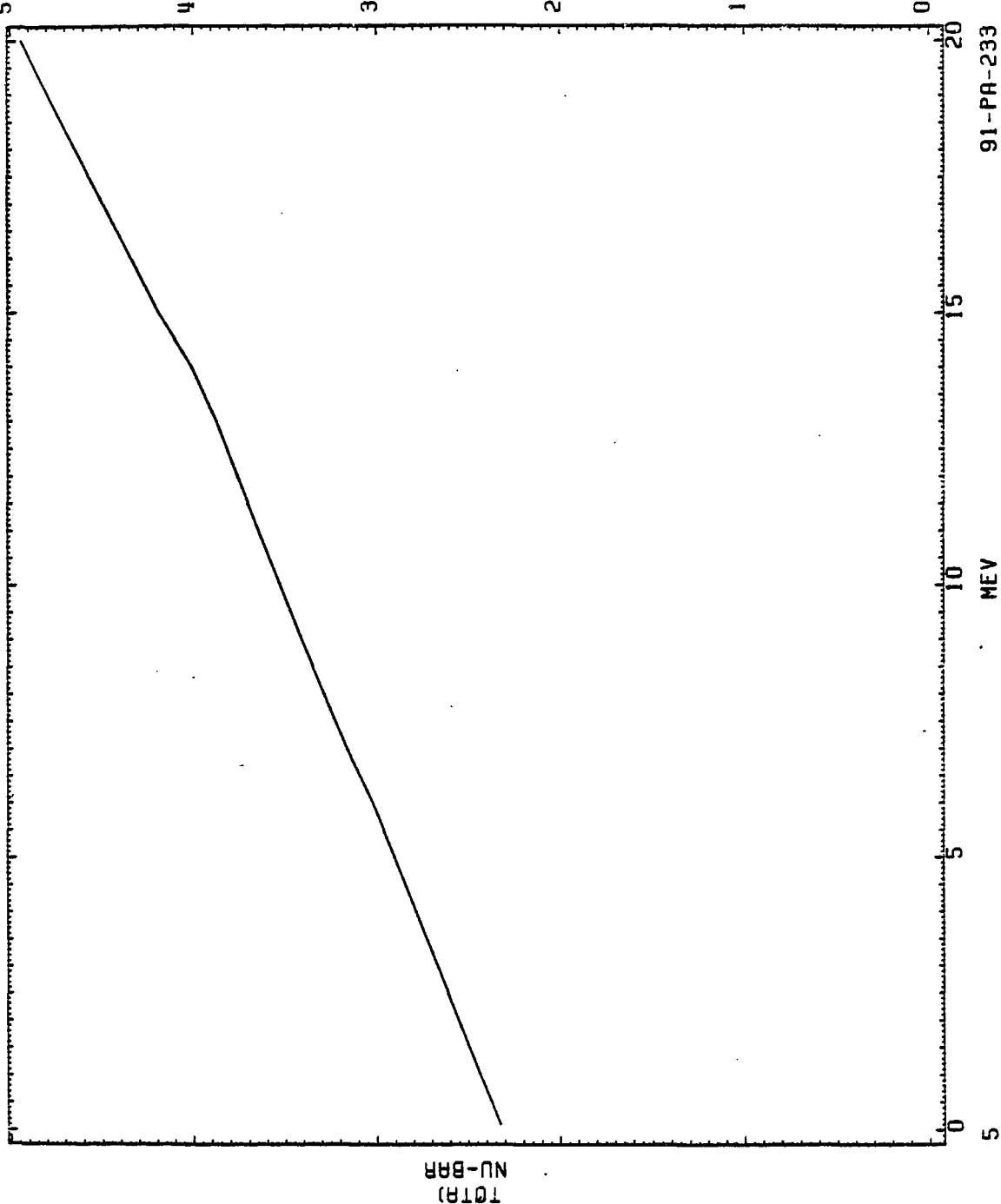
91-PA-233



MAT 9993

PARAMETERS

91-PA-233



TOTAL
NU-BRR

0

5

10

15

20

0

1

2

3

4

5

MEV

91-PA-233

