======================================================================= Complot

Complot

PROGRAM COMPLOT Complot

=============== Complot

VERSION 83-1 (FEBRUARY, 1983) Complot

VERSION 83-2 (MAY, 1983) Complot

VERSION 83-3 (DECEMBER, 1983) \*MAJOR MODIFICATION. Complot

\*ADDED SELECTION OF PLOTS BY MAT OR Complot

ZA/MT/ENERGY RANGE (EV). Complot

\*ADDED VARIABLE AXIS UNITS (PROGRAM Complot

CONTROLLED..X=MILLI-EV, EV, KEV, Complot

MEV...Y=MILLI-BARNS, BARNS). Complot

VERSION 84-1 (APRIL, 1984) \*ADDED SELECTION BY REACTION/ENERGY Complot

RANGE. Complot

\*ADDED IDENTIFY DATA POINTS OPTION Complot

(SMALL BOX DRAWN AROUND EACH CROSS Complot

SECTION AND RATIO POINT). Complot

\*IMPROVED NON-IBM GRAPHICS INTERFACE Complot

(ALL CHARACTER POSITIONING NOW Complot

BASED ON CHARACTER, NOT RASTER, Complot

SIZE). Complot

VERSION 85-1 (APRIL, 1985) \*SPECIAL I/O ROUTINES TO GUARANTEE Complot

ACCURACY OF ENERGY. Complot

\*DOUBLE PRECISION TREATMENT OF Complot

ENERGY (REQUIRED FOR NARROW Complot

RESONANCES). Complot

\*ADDED (ZA,MT) EQUIVALENCE OPTION. Complot

\*ADDED SMALL PLOT OPTION. Complot

VERSION 85-2 (AUGUST, 1985) \*FORTRAN-77/H VERSION Complot

VERSION 86-1 (JANUARY, 1986) \*ENERGY DEPENDENT SCATTERING RADIUS Complot

VERSION 86-2 (DECEMBER, 1986) \*DOUBLE PRECISION PLOT SCALING Complot

(REQUIRED FOR NARROW ENERGY RANGES) Complot

VERSION 88-1 (JULY 1988) \*MAJOR REVISION TO MAKE CODE EASILY Complot

INTERFACEABLE TO ALMOST ANY PLOTTER Complot

\*WARNING..INPUT PARAMETERS FROM BEEN Complot

CHANGED (SEE, DESCRIPTION BELOW) Complot

\*COMPUTER INDEPENDENT SOFTWARE Complot

CHARACTERS. Complot

\*COLOR PLOTS. Complot

\*MT NUMBER DEFINITIONS FROM DATA Complot

FILE READ BY PROGRAM Complot

\*FORTRAN-77 REQUIRED (FORTRAN-H NO Complot

SUPPORTED BY THIS PROGRAM). Complot

\*OPTION...INTERNALLY DEFINE ALL I/O Complot

FILE NAMES (SEE, SUBROUTINE FILEIO Complot

FOR DETAILS). Complot

\*IMPROVED BASED ON USER COMMENTS. Complot

VERSION 88-2 (OCTOBER 1988) \*IMPROVED BASED ON USER COMMENTS. Complot

\*ADDED LIVERMORE CIVIC COMPILER Complot

CONVENTIONS. Complot

\*UPDATED TO USE NEW PROGRAM CONVERT Complot

KEYWORDS. Complot

VERSION 89-1 (JANUARY 1989) \*PSYCHOANALYZED BY PROGRAM FREUD TO Complot

INSURE PROGRAM WILL NOT DO ANYTHING Complot

CRAZY. Complot

\*FORTRAN-77/FORTRAN-H COMPATIBLE Complot

\*SPECIAL ENDF/B MATERIAL DEFINITIONS Complot

(ZA.LT.1000) FROM DATA FILE READ Complot

BY PROGRAM. Complot

VERSION 89-2 (MARCH 1989) \*ADDED ENDF/B-V AND VI MT Complot

DEFINITIONS. PROGRAM WILL DETERMINE Complot

ENDF/B FORMAT BASED ON MF=1, Complot

MT=451 AND USE AS PPROPRIATE MT Complot

DEFINITIONS. IF NO MF=1, MT=451 Complot

PROGRAM WILL USE ENDF/B-VI Complot

MT DEFINITIONS. Complot

VERSION 90-1 (AUGUST 1990) \*A NEW PROGRAM Complot

\*ADDED INTERACTIVE MOUSE INPUT Complot

\*ADDED 3 CHARACTER FONTS Complot

\*ADDED PHOTON DATA, MF=23 AND 27 Complot

\*ADDED FORTRAN SAVE OPTION. Complot

\*ADDED MAXIMUM RATIO RANGE WHEN Complot

PLOTTING RATIOS. Complot

\*ADDED GRID TYPES Complot

\*ADDED VARIABLE LINE THICKNESS Complot

\*WARNING...INPUT PARAMETER FORMAT Complot

HAS BEEN CHANGED...SEE DESCRIPTION Complot

BELOW. Complot

VERSION 92-1 (JANUARY 1992) \*ADDED INCIDENT CHARGED PARTICLES Complot

(IDENTIFIED IN PLOT TITLES) Complot

\*ADDED COMPLETELY COMPATIBLE I/O Complot

FOR READING FLOATING POINT NUMBERS. Complot

VERSION 92-2 (MAY 1992) \*CORRECTED DESCRIPTION OF INPUT Complot

PARAMETERS AND EXAMPLE PROBLEMS. Complot

\*ADDED VARIABLE CHARACTER SIZE INPUT Complot

VERSION 93-1 (MARCH 1993) \*UPDATE FOR ON SCREEN GRAPHIC Complot

OUTPUT USING THE LAHEY COMPILER Complot

\*ADDED NU-BAR (TOTAL, DELAYED, Complot

PROMPT). Complot

VERSION 94-1 (JANUARY 1994) \*VARIABLE ENDF/B DATA FILENAMES Complot

TO ALLOW ACCESS TO FILE STRUCTURES Complot

(WARNING - INPUT PARAMETER FORMAT Complot

HAS BEEN CHANGED) Complot

\*CLOSE ALL FILES BEFORE TERMINATING Complot

(SEE, SUBROUTINE ENDIT) Complot

VERSION 95-1 (MARCH 1995) \*CORRECTED CROSS SECTION Complot

MULTIPLIER FOR EQUIVALENCES Complot

\*CORRECTED RATIO SCALING, FOR Complot

MAXIMUM RATIO LESS THAN 1.0 Complot

VERSION 96-1 (JANUARY 1996) \*COMPLETE RE-WRITE Complot

\*IMPROVED COMPUTER INDEPENDENCE Complot

\*ALL DOUBLE PRECISION Complot

\*UNIFORM TREATMENT OF ENDF/B I/O Complot

\*IMPROVED OUTPUT PRECISION Complot

\*DEFINED SCRATCH FILE NAMES Complot

\*INCREASED PAGE SIZE FROM 24000 Complot

TO 48000 POINTS Complot

VERSION 97-1 (APRIL 1997) \*INCREASED PAGE SIZE FROM 48000 Complot

TO 480000 POINTS Complot

VERSION 99-1 (MARCH 1999) \*CORRECTED CHARACTER TO FLOATING Complot

POINT READ FOR MORE DIGITS Complot

\*UPDATED TEST FOR ENDF/B FORMAT Complot

VERSION BASED ON RECENT FORMAT CHANGE Complot

\*GENERAL IMPROVEMENTS BASED ON Complot

USER FEEDBACK Complot

VERS. 2000-1 (FEBRUARY 2000)\*GENERAL IMPROVEMENTS BASED ON Complot

USER FEEDBACK Complot

VERS. 2002-1 (MAY 2002) \*INPUT PARAMETERS OPTIONAL Complot

\*CONTROL MINIMUM RATIO RANGE BY INPUT Complot

\*OPTIONAL BLACK OR WHITE BACKGROUND Complot

VERS. 2004-1 (SEPT. 2004) \*ADDED INCLUDE FOR COMMON Complot

\*INCREASED PAGE SIZE FROM 480000 Complot

TO 600000 POINTS Complot

\*ADDED NEW REICH-MOORE TO FILE2 TO Complot

ALLOW IDENTIFICATION OF RESOLVED AND Complot

ANY FOLLOWING UNRESOLVED RESONANCE Complot

REGIONS. Complot

VERS. 2007-1 (JAN. 2007) \*CHECKED AGAINST ALL ENDF/B-VII. Complot

\*INCREASED MAXLOAD TO 600,000 FROM Complot

12,000 Complot

VERS. 2009-1 (JAN. 2009) \*IGNORED DIFFERENCES NEAR RESONANCE Complot

REGION BOUNDARIES (RESOLVED AND Complot

UNRESOLVED). Complot

VERS. 2010-1 (July 2010) \*Allow comparison plot even if there Complot

is no difference (just see data). Complot

\*ONLY plot linearly interpoolable data Complot

\*Include threshold energy points to Complot

show cross sections, but NOT ratios Complot

near threshold. Complot

VERS. 2011-1 (Jan. 2011) \*Increased MT.DAT from 200 to 1,000 Complot

entries, to accommodate new MTs. Complot

VERS. 2012-1 (Aug. 2012) \*Increased incident particle list to Complot

include photon (ZA = 0). Complot

\*Added CODENAME Complot

\*32 and 64 bit Compatible Complot

\*Added ERROR stop Complot

VERS. 2013-1 (Nov. 2013) \*ONLY use min/max ratios to decide Complot

whether or not to plot - non-positive Complot

cross sections are no longer used. Complot

\*Limited per-cent differences to fit Complot

output format = -9999 to +9999 %. Complot

\*OUT9 replaced NORMX Complot

VERS. 2015-1 (Jan. 2015) \*Added MF=10 Radionuclide Production Complot

which requires longer plot titles. Complot

\*Restricted character size multiplier Complot

to 0.5 to 1.5 to accommodate longer Complot

plot titles. Complot

\*Replaced ALL 3 way if statements. Complot

**VERS. 2015-2 (Mar. 2015) \*Corrected tables for X and Y axis Complot**

**labels = search for 2015-2 Complot**

**Complot**

**2015-2 Acknowledgment Complot**

**===================== Complot**

**I thank Chuck Whitmer (TerraPower,WA) for reporting the errors Complot**

**that led to the 2015-2 Improvements in this code. Complot**

**Complot**

**I thank Jean-Christophe Sublet (UKAEA) for contributing MAC Complot**

**executables and Bojan Zefran (IJS, Slovenia) for contributing Complot**

**LINUX (32 or 63 bit) executables. And most of all I must thank Complot**

**Andrej Trkov (NDS, IAEA) for overseeing the entire PREPRO project Complot**

**at IAEA, Vienna. This was a truly International team who worked Complot**

**together to produce PREPRO 2015-2. Complot**

Complot

OWNED, MAINTAINED AND DISTRIBUTED BY Complot

------------------------------------ Complot

THE NUCLEAR DATA SECTION Complot

INTERNATIONAL ATOMIC ENERGY AGENCY Complot

P.O. BOX 100 Complot

A-1400, VIENNA, AUSTRIA Complot

EUROPE Complot

Complot

ORIGINALLY WRITTEN BY Complot

------------------------------------ Complot

Dermott E. Cullen Complot

Complot

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--------------------------- Complot

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Complot

AUTHORS MESSAGE Complot

--------------- Complot

THE COMMENTS BELOW SHOULD BE CONSIDERED THE LATEST DOCUMENTATION Complot

ALL RECENT IMPROVEMENTS. PLEASE READ ALL OF THESE COMMENTS BEFORE, Complot

PARTICULARLY THE COMMENTS CONCERNING MACHINE DEPENDENT CODING. Complot

Complot

AT THE PRESENT TIME WE ARE ATTEMPTING TO DEVELOP A SET OF COMPUTER Complot

INDEPENDENT PROGRAMS THAT CAN EASILY BE IMPLEMENTED ON ANY ONE Complot

OF A WIDE VARIETY OF COMPUTERS. IN ORDER TO ASSIST IN THIS PROJECT Complot

IT WOULD BE APPECIATED IF YOU WOULD NOTIFY THE AUTHOR OF ANY Complot

COMPILER DIAGNOSTICS, OPERATING PROBLEMS OR SUGGESTIONS ON HOW TO Complot

IMPROVE THIS PROGRAM. HOPEFULLY, IN THIS WAY FUTURE VERSIONS OF Complot

THIS PROGRAM WILL BE COMPLETELY COMPATIBLE FOR USE ON YOUR Complot

COMPUTER. Complot

Complot

PURPOSE Complot

------- Complot

COMPARE ENDF/B FORMATTED DATA FROM TWO SEPARATE INPUT TAPES. Complot

REACTIONS ARE CONSIDERED TO BE COMPARABLE IF THEY HAVE THE SAME Complot

(ZA,MF,MT). RESULTS ARE PRESENTED IN GRAPHICAL FORM. Complot

Complot

IN THE FOLLOWING FOR SIMPLICITY THE ENDF/B TERMINOLOGY--ENDF/B Complot

TAPE--WILL BE USED. IN FACT THE ACTUAL MEDIUM MAY BE TAPE, CARDS, Complot

DISK OR ANY OTHER MEDIUM. Complot

Complot

ON WHAT COMPUTERS WILL THE PROGRAM RUN Complot

------------------------------------------------------------------ Complot

THE PROGRAM HAS BEEN IMPLEMENTED ON A VARIETY OF COMPUTERS FROM Complot

CRAY AND IBM MAINFRAME TO SUN WORKSTATIONS TO AN IBM-AT PC. THE Complot

PROGRAM IS SMALL ENOUGH TO RUN ON VIRTUALLY ANY COMPUTER. Complot

Complot

THE PROGRAM USES A SIMPLE CALCOMP LIKE GRAPHICS INTERFACE Complot

(DESCRIBED BELOW) AND ALLOWS THE USER SPECIFY THE PHYSICAL SIZE Complot

OF THE PLOTTER BEING USED, BY INPUT PARAMETERS. USING THESE Complot

CONVENTIONS THIS PROGRAM CAN BE EASILY INTERFACED TO VIRTUALLY Complot

ANY PLOTTER. Complot

Complot

FOR SPECIAL CONSIDERATIONS SEE THE SECTIONS BELOW ON, Complot

(1) COMPUTER DEPENDENT CODING Complot

(2) PLOTTER/GRAPHICS TERMINAL INTERFACE Complot

Complot

GRAPHICS INTERFACE Complot

------------------------------------------------------------------ Complot

THIS PROGRAM USES A SIMPLE CALCOMP LIKE GRAPHICS INTERFACE WHICH Complot

REQUIRES ONLY 3 SUBROUTINES...PLOTS, PLOT AND PEN (DESCRIBED IN Complot

DETAIL BELOW). ALL CHARACTERS AND SYMBOLS ARE DRAWN USING TABLES Complot

OF PEN STROKES (SUPPLIED WITH THIS PROGRAM). USING THIS METHOD Complot

THE PROGRAM SHOULD BE SIMPLE TO INTERFACE TO VIRTUALLY ANY PLOTTER Complot

OR GRAPHICS TERMINAL AND THE APPEARANCE AND LAYOUT OF THE PLOTS Complot

SHOULD BE INDEPENDENT OF WHICH PLOTTER IS USED. Complot

Complot

2015 PLOTTER DIMENSIONS Complot

================================================================== Complot

PLOTTER DIMENSIONS ARE IN INCHES - NOT CM, MM, OR CUBITS. Complot

THIS IS DONE FOR HISTORICAL REASONS AND HOPEFULLY THIS WILL Complot

NOT INCONVENIENCE ANYONE - IN PRACTICE I HAVE USED EXACTLY THE Complot

SAME DIMENSION = X = 0 to 12.5 and Y = 0 to 10 FOR DECADES Complot

TO PRODUCE BOTH ON-SCREEN AND HARDCOPY POSTSCRIPT PLOTS. Complot

Complot

I STRONGLY SUGGEST THAT YOU NOT CHANGE THESE DIMENSIONS UNLESS Complot

YOU MUST = BASED ON THE PLOT SIZE YOU OBTAIN WHEN YOU FIRST RUN Complot

THIS CODE. Complot

Complot

PROGRAM IDENTIFICATION Complot

---------------------- Complot

AS DISTRIBUTED THE FIRST FRAME OF PLOTTED OUTPUT WILL DOCUMENT Complot

THE PROGRAM NAME, VERSION AND INSTALLATION. THIS INFORMATION IS Complot

STORED AS DATA IN THE ARRAY VERSES NEAR THE BEGINNING OF Complot

SUBROUTINE FRAME1. IF YOU WISH TO CUSTOMIZE THE OUTPUT TO IDENTIFY Complot

YOUR INSTALLATION CHANGE THE LAST TWO LINES OF THE ARRAY (VERSES). Complot

Complot

ENDF/B FORMAT Complot

------------- Complot

THIS PROGRAM ONLY USES THE ENDF/B BCD OR CARD IMAGE FORMAT (AS Complot

OPPOSED TO THE BINARY FORMAT) AND CAN HANDLE DATA IN ANY VERSION Complot

OF THE ENDF/B FORMAT (I.E., ENDF/B-I, II,III, IV, V OR VI FORMAT). Complot

Complot

BOTH SETS OF EVALUATED DATA MUST BE IN THE ENDF/B FORMAT. ONLY Complot

SECTIONS OF FILE 2 (RESONANCE PARAMETERS) AND FILES 3, 23 AND 27 Complot

(TABULATED DATA) WILL BE READ AND ALL OTHER SECTIONS WILL BE Complot

SKIPPED. IN FILE 2 THE ONLY IMPORTANT INFORMATION IS THE ENERGY Complot

LIMITS OF THE RESOLVED AND UNRESOLVED RESONANCE REGION WHICH IS Complot

LOCATED IN THE SAME FIELDS IN ALL VERSIONS OF THE ENDF/B FORMAT. Complot

SIMILARLY THE FORMAT OF FILES 3, 23 AND 27 IS THE SAME IN ALL Complot

VERSIONS OF ENDF/B. THEREFORE THIS PROGRAM CAN BE USED WITH DATA Complot

IN ANY ENDF/B FORMAT (I.E. ENDF/B-I, II, III, IV, V OR VI). Complot

Complot

CROSS SECTION INTERPOLATION Complot

--------------------------- Complot

CROSS SECTIONS MUST BE IN EITHER HISTOGRAM (I.E., INTERPOLATION Complot

LAW 1) OR LINEARLY INTERPOLABLE (I.E. INTERPOLATION LAW 2) FORM. Complot

IF THEY ARE NOT A WARNING MESSAGE WILL BE PRINTED AND EXECUTION Complot

WILL BE TERMINATED. SEE INSTRUCTIONS BELOW ON HOW TO CONVERT Complot

DATA TO HISTOGRAM OR LINEARLY INTERPOLABLE FORM. Complot

Complot

REACTION INDEX Complot

-------------- Complot

THIS PROGRAM DOES NOT USE THE REACTION INDEX WHICH IS GIVEN IN Complot

SECTION MF=1, MT=451 OF EACH EVALUATION. Complot

Complot

SECTION SIZE Complot

------------ Complot

SINCE THIS PROGRAM USES A LOGICAL PAGING SYSTEM THERE IS NO LIMIT Complot

TO THE NUMBER OF POINTS IN ANY SECTION, E.G., THE TOTAL CROSS Complot

SECTION MAY BE REPRESENTED BY 200,000 DATA POINTS. Complot

Complot

DATA SELECTION Complot

-------------- Complot

THE USER MAY SPECIFYING THE DATA TO BE COMPARED BY INPUTTING UP Complot

TO 100 MAT/MT/ENERGY OR ZA/MT/ENERGY RANGES. IF THE UPPER LIMIT Complot

OF THE MAT OR ZA RANGE IS LESS THAN THE LOWER LIMIT IT WILL BE SET Complot

EQUAL TO THE LOWER LIMIT (I.E. THIS INDICATE ONLY COMPARE ONE Complot

MAT OR ZA). IF THE UPPER LIMIT IS STILL ZERO IT WILL BE SET TO Complot

9999 (NO LIMIT). IF THE UPPER MF OR MT LIMIT IS ZERO IT WILL BE Complot

SET TO 99 OR 999, RESPECTIVELY (NO LIMIT). IF THE UPPER ENERGY Complot

LIMIT IS ZERO IT WILL BE SET TO A LARGE NUMBER (NO LIMIT). Complot

Complot

THE LIST OF RANGES MUST BE TERMINATED BY A BLANK LINE (I.E. ZERO Complot

LOWER AND UPPER MAT/MF/MT OR ZA/MF/MT LIMITS). Complot

Complot

IF THE FIRST RANGE LINE IS BLANK THIS LINE WILL TERMINATE THE Complot

LIST OF REQUESTS (I.E. A SECOND BLANK LINE NEED NOT BE INPUT) Complot

AND ALL PHYSICALLY COMPARABLE DATA WILL BE PLOTTED. Complot

Complot

WHICH REACTIONS WILL BE PLOTTED Complot

------------------------------- Complot

THOSE REACTIONS WITH THE SAME (ZA, MF, MT) WILL BE COMPARED, BUT Complot

ONLY THOSE DATA WHICH DIFFER BY A USER SPECIFIED ALLOWABLE Complot

DIFFERENCE WILL BE PLOTTED. IN ORDER TO FORCE ALL COMPARABLE Complot

REACTIONS TO BE PLOTTED THE USER NEED ONLY SPECIFY AN ALLOWABLE Complot

DIFFERENCE OF ZERO. Complot

Complot

EQUIVALENT REACTIONS Complot

-------------------- Complot

IN ORDER TO COMPARE REACTIONS WHICH HAVE DIFFERENT ZA, MF OR MT Complot

THE USER IS ALLOWED TO SPECIFY AN EQUIVALENCE LIST OF UP TO Complot

100 (ZA,MF,MT) COMBINATIONS ON THE MASTER FILE WHICH ARE TO BE Complot

EQUATED TO DIFFERENT (ZA,MF,MT) ON THE SECOND FILE. THIS OPTION Complot

MAY BE USED TO COMPARE SIMILAR REACTIONS FROM DIFFERENT MATERIALS Complot

(E.G. IRON AND NICKEL INELASTIC SCATTERING) OR DIFFERENT REACTIONS Complot

FROM THE SAME OR DIFFERENT MATERIALS (E.G. U-235 CAPTURE AND Complot

FISSION - IN WHICH CASE THE RATIO WILL BE THE CAPTURE TO FISSION Complot

RATIO) OR THE SAME REACTION IN DIFFERENT VERSIONS OF THE ENDF/B Complot

FORMAT WHICH MAY BE ASSIGNED DIFFERENT MT NUMBERS, E.G., THE Complot

PHOTOELECTRIC CROSS SECTION IS MT=602 IN ENDF/B-V AND EARLIER Complot

VERSIONS OF ENDF/B, BUT IS MT=522 IN ENDF/B-VI. Complot

Complot

IN THESE EQUIVALENCE LISTS A ZERO FIELD IMPLIES ALL. FOR EXAMPLE, Complot

TO EQUATE MT=522 FROM ONE FILE TO MT=602 ON THE OTHER, FOR ALL Complot

MATERIALS, ONE NEED ONLY SPECIFY ZA=0, MF=23, MT=522 EQUIVALENT Complot

TO ZA=0, MF=23 AND MT=602. Complot

Complot

PLOT FORMATS Complot

------------ Complot

THE TWO CROSS SECTIONS ARE CONSIDERED TO BE A STANDARD (THE FIRST Complot

CROSS SECTION) AND A CROSS SECTION TO BE COMPARED TO THE STANDARD Complot

(THE SECOND CROSS SECTION). THE OUTPUT FROM THIS PROGRAM IS A Complot

SERIES OF PLOTS. EACH PLOT WILL CONTAIN THE STANDARD CROSS SECTION Complot

AND IN ADDITION THE USER MAY SPECIFY THAT EACH PLOT ALSO CONTAIN Complot

THE SECOND CROSS SECTION AND/OR THE RATIO OF THE SECOND CROSS Complot

SECTION TO THE FIRST CROSS SECTION. Complot

Complot

THE USER MAY SELECT ONE OF THE FOLLOWING FIVE PLOT FORMATS (THE Complot

NUMBER PRECEDING THE OPTION IS THE VALUE OF THE PLOT MODE SELECTOR Complot

THAT THE USER SHOULD SPECIFY AS INPUT ON THE FIRST LINE). Complot

Complot

(0) THE STANDARD CROSS SECTION (I.E. FIRST EVALUATION) AND THE Complot

RATIO OF THE SECOND EVALUATION TO THE FIRST EVALUATION. THE Complot

DATA WILL BE PRESENETED AS TWO SUB-PLOTS PER PLOT WITH THE Complot

STANDARD CROSS SECTION IN THE UPPER HALF OF THE PLOT AND THE Complot

RATIO IN THE LOWER HALF OF THE PLOT. Complot

Complot

(1) THE STANDARD CROSS SECTION (I.E. FIRST EVALUATION) AND THE Complot

SECOND EVALUATION. THE DATA WILL BE PRESENTED AS TWO SUB-PLOTS Complot

PER PLOT WITH THE STANDARD CROSS SECTION ON THE UPPER HALF Complot

OF THE PLOT AND THE SECOND CROSS SECTION IN THE LOWER HALF OF Complot

THE PLOT. Complot

Complot

(2) THE STANDARD CROSS SECTION (I.E. FIRST EVALUATION) AND THE Complot

SECOND EVALUATION. THE DATA WILL BE PRESENTED AS ONE PLOT Complot

CONTAINING BOTH THE STANDARD AND SECOND CROSS SECTION. THE Complot

STANDARD CROSS SECTION WILL BE PRESENTED AS A SOLID LINE AND Complot

THE SECOND CROSS SECTION WILL BE PRESENTED AS A DASHED LINE. Complot

Complot

(3) THE STANDARD CROSS SECTION, SECOND CROSS SECTION AND RATIO OF Complot

THE SECOND CROSS SECTION TO THE FIRST CROSS SECTION. THE DATA Complot

WILL BE PRESENTED AS THREE SUB-PLOTS PER PLOT WITH THE Complot

STANDARD CROSS SECTION IN THE UPPER THIRD OF THE PLOT, THE Complot

SECOND CROSS SECTION IN THE MIDDLE THIRD AND THE RATIO OF THE Complot

TWO IN THE LOWER THIRD OF THE PLOT (RECOMMENDED OPTION). Complot

Complot

(4) THE STANDARD CROSS SECTION, SECOND CROSS SECTION AND RATIO OF Complot

THE SECOND CROSS SECTION TO THE FIRST CROSS SECTION. THE DATA Complot

WILL BE PRESENTED AS TWO SUB-PLOTS PER PLOT WITH THE STANDARD Complot

AND SECOND CROSS SECTION ON THE SAME SUB-PLOT IN THE UPPER Complot

TWO THIRDS OF THE PLOT AND THE RATIO OF THE TWO IN THE LOWER Complot

THIRD OF THE PLOT. THE STANDARD CROSS SECTION WILL BE Complot

PRESENTED AS A SOLID LINE AND THE SECOND CROSS SECTION WILL BE Complot

PRESENTED AS A DASHED LINE. Complot

Complot

ADDITIONAL PLOT FEATURES Complot

------------------------ Complot

IN ADDITION TO THE CROSS SECTIONS AND/OR RATIO THE FOLLOWING Complot

INFORMATIONS WILL BE INCLUDED ON EACH PLOT. Complot

Complot

(1) AN IDENTIFICATION FOR EACH SET OF CROSS SECTIONS (UP TO 30 Complot

CHARACTERS FOR EACH SET). Complot

Complot

(2) THE MAXIMUM NEGATIVE AND POSITIVE PER-CENT DIFFERENCE BETWEEN Complot

THE TWO CROSS SECTIONS. Complot

Complot

(3) ARROWS INDICATING THE ENERGY AT WHICH THE MAXIMUM DIFFERENCES Complot

(MINIMUM AND MAXIMUM RATIO) OCCUR. Complot

Complot

(4) THE ENERGY LIMITS OF THE RESOLVED AND UNRESOLVED RESONANCE Complot

REGION (IF THEY FALL WITHIN THE ENERGY LIMITS OF THE PLOT). Complot

Complot

RATIO DATA Complot

---------- Complot

IF RATIO OUTPUT IS REQUESTED THE RATIO WILL BE DEFINED AT EACH Complot

ENERGY THAT APPEARS IN EITHER EVALUATION. BETWEEN THESE ENERGIES Complot

THE RATIO WILL BE PLOTTED ASSUMING LINEAR DEPENDENCE BETWEEN Complot

TABULATED VALUES. FOR HISTOGRAM OR LINEARLY INTERPOLABLE CROSS Complot

SECTIONS THIS REPRESENTATION WILL POINT OUT ALL EXTREMA OF THE Complot

RATIO, BUT NOT NECESSARILY THE ENERGY DEPENDENCE BETWEEN TABULATED Complot

VALUES. Complot

Complot

IF THE EVALUATED DATA IS NOT IN EITHER HISTOGRAM OR LINRARLY Complot

INTERPOLABLE FORM THE RATIO MAY NOT EVEN FIND ALL EXTREMA. FOR Complot

EXAMPLE, IF ONE EVALUATION IS LINEARLY INTERPOLABLE AND THE Complot

OTHER NON-LINEAR, BUT BOTH AGREE AT ALL TABULATED ENERGIES THE Complot

RATIO WILL APPEAR TO BE EQUAL TO UNITY AT ALL ENERGIES, BUT IN Complot

FACT THE CROSS SECTION BETWEEN TABULATED ENERGIES MAY BE QUITE Complot

DIFFERENT USING LINEAR VS. NON-LINEAR INTERPOLATION. FOR THIS Complot

REASON ONLY LINEARLY INTERPOLABLE OR HISTOGRAM DATA IS ALLOWED Complot

AS INPUT TO THIS PROGRAM. Complot

Complot

LINEAR INTERPOLABLE Complot

------------------- Complot

ALL CROSS SECTIONS MAY BE CONVERTED TO LINEARLY INTERPOLABLE FORM Complot

BE USING PROGRAM LINEAR (UCRL-50400, VOL. 17, PART A). Complot

Complot

HISTOGRAM Complot

--------- Complot

ALL LINEARLY INTERPOLABLE CROSS SECTION MAY BE CONVERTED TO Complot

HISTOGRAM (I.E. MULTIGROUP) FORM BY USING PROGRAM GROUPIE Complot

(UCRL-50400, VOL. 17, PART D). Complot

Complot

INPUT UNITS Complot

----------- Complot

UNIT DESCRIPTION Complot

---- ----------- Complot

2 INPUT LINE Complot

9 MT DEFINITIONS. Complot

10 FIRST ENDF/B FORMATTED EVALUATION (STANDARD). Complot

11 SECOND ENDF/B FORMATTED EVALUATION. Complot

17 SOFTWARE CHARACTERS. Complot

18 SOFTWARE SYMBOLS AND LINE TYPES Complot

Complot

OUTPUT UNITS Complot

------------ Complot

UNIT DESCRIPTION Complot

---- ----------- Complot

3 NORMAL OUTPUT REPORT. Complot

16 PLOTTER UNIT Complot

Complot

SCRATCH UNITS Complot

------------- Complot

UNIT DESCRIPTION Complot

---- ----------- Complot

12 SCRATCH UNIT FOR FIRST EVALUATION Complot

13 SCRATCH UNIT FOR SECOND EVALUATION Complot

14 SCRATCH UNIT FOR RATIO (ONLY USED IF RATIOS REQUESTED). Complot

Complot

OPTIONAL STANDARD FILE NAMES (SEE SUBROUTINE FILIO1 AND FILIO2) Complot

--------------------------------------------------------------- Complot

UNIT FILE NAME Complot

---- ---------- Complot

2 COMPLOT.INP Complot

3 COMPLOT.LST Complot

9 MT.DAT Complot

10 ENDFB.IN1 (OR AS READ FROM INPUT) Complot

11 ENDFB.IN2 (OR AS READ FROM INPUT) Complot

12-14 (SCRATCH) Complot

15 PLOT.CHR Complot

16 (PLOTTER UNIT...USUALLY A DUMMY) Complot

Complot

INPUT PARAMETERS Complot

------------------------------------------------------------------ Complot

LINE COLUMNS FORMAT DESCRIPTION Complot

---- ------- ------ ----------- Complot

1 1-11 E11.4 LOWER X LIMIT OF PLOTTER Complot

12-22 E11.4 UPPER X LIMIT OF PLOTTER Complot

23-33 E11.4 LOWER Y LIMIT OF PLOTTER Complot

34-44 E11.4 UPPER Y LIMIT OF PLOTTER Complot

45-55 I11 NUMBER OF PLOTS PER FRAME IN X DIRECTION Complot

56-66 I11 NUMBER OF PLOTS PER FRAME IN Y DIRECTION Complot

67-70 F4.1 CHARACTER SIZE MULTIPLIER Complot

= 0 TO 1 - NORMAL CHARACTER SIZE Complot

= OTHERWISE - CHARACTERS SCALED BY THIS Complot

FACTOR Complot

Complot

PLOT ORIENTATION IS BASED ON THE UPPER X Complot

LIMIT Complot

= .GT.0 - X HORIZONTAL/Y VERTICAL Complot

= .LT.0 - Y HORIZONTAL/X VERTICAL Complot

AFTER TESTING THE UPPER X LIMIT WILL BE Complot

SET TO ITS ABSOLUTE VALUE. Complot

2 1-72 A72 FILENAME FOR FIRST ENDF/B DATA FILE Complot

(LEAVE BLANK FOR ENDFB.IN1) Complot

3 1-72 A72 FILENAME FOR SECOND ENDF/B DATA FILE Complot

(LEAVE BLANK FOR ENDFB.IN2) Complot

4 1-11 I11 RETRIEVAL MODE (0=MAT, 1=ZA) Complot

12-22 I11 GRID (SPEED) OPTION. Complot

= 0 - TICK MARKS ON BORDER Complot

= 1 - SOLID AT COARSE INTERVALS Complot

= 2 - DASHED AT COARSE INTERVALS Complot

= 3 - SOLID AT COARSE AND FINE INTERVALS Complot

= 4 - DASHED AT COARSE AND FINE INTERVALS Complot

= 5 - SOLID COARSE/DASHED FINE INTERVALS Complot

23-33 I11 SHOULD BORDER BE PLOTTED AROUND EACH PLOT Complot

= 0 - NO Complot

= 1 - YES Complot

34-44 I11 LINE THICKNESS Complot

= 0 TO 5 - LINES AND CHARACTERS Complot

=-1 TO -5 - ONLY LINES Complot

45-55 I11 OUTPUT MODE Complot

=-1 - ONLY COMPARISON LISTING. NO PLOTS. Complot

= 0 - CROSS SECTION OVER RATIO. Complot

= 1 - CROSS SECTION OVER CROSS SECTION. Complot

= 2 - TWO CROSS SECTIONS ON SAME PLOT. Complot

= 3 - CROSS SECTION OVER CROSS SECTION OVER Complot

RATIO. Complot

= 4 - TWO CROSS SECTIONS ON SAME PLOT OVER Complot

RATIO. Complot

56-66 I11 STARTING PLOT NUMBER Complot

= 0 - DO NOT NUMBER PLOTS Complot

= .GT.0 - NUMBER PLOTS IN LOWER LEFT HAND Complot

CORNER STARTING WITH INPUT NUMBER Complot

67-70 I41 BACKGROUND COLOR Complot

= 0 = BLACK Complot

= OTHERWISE = WHITE Complot

5 1-11 E11.4 ALLOWABLE FRACTIONAL DIFFERENCE. USED WHEN Complot

PLOTTING RATIOS. ANY REACTION WHERE THE Complot

TWO EVALUATIONS DIFFER BY MORE THAN THE Complot

ALLOWABLE DIFFERENCE WILL BE PLOTTED. IF Complot

ZERO IS INPUT THE STANDARD ALLOWABLE Complot

DIFFERENCE OF 0.001 (0.1 PER-CENT) WILL BE Complot

USED. Complot

12-22 E11.4 MAXIMUM ALLOWABLE RATIO. IF RATIOS ARE Complot

PLOTTED THEY WILL BE IN THE RANGE RATMAX Complot

TO 1/RATMAX. IF 0.0 IS INPUT THERE WILL Complot

BE NO LIMIT ON THE RANGE OF THE RATIOS. Complot

THIS OPTION MAY BE USED TO IGNORE LARGE Complot

DIFFERENCES OVER VERY NARROW ENERGY RANGES Complot

(WHICH MAY BE UNIMPORTANT) AND ALLOW ONE Complot

TO SEE IMPORTANT, BUT SMALLER DIFFERENCES, Complot

OVER EXTENDED ENERGY RANGES. Complot

6 1-40 40A1 IDENTIFICATION FOR UPPER EVALUATIONS Complot

7 1-40 40A1 IDENTIFICATION FOR LOWER EVALUATIONS Complot

(IDENTIFICATIONS SHOULD BE LEFT ADJUSTED Complot

TO START IN COLUMN 1). Complot

8-N 1- 6 I6 LOWER MAT OR ZA LIMIT (SEE SELECTION MODE, Complot

INPUT LINE 1, COLUMNS 1-11). Complot

7- 8 I2 LOWER MF LIMIT Complot

9-11 I3 LOWER MT LIMIT Complot

12-22 E11.4 LOWER ENERGY LIMIT Complot

23-28 I6 UPPER MAT OR ZA LIMIT (SEE SELECTION MODE, Complot

INPUT LINE 1, COLUMNS 1-11). Complot

29-30 I2 UPPER MF LIMIT Complot

31-33 I3 UPPER MT LIMIT Complot

34-44 E11.4 UPPER ENERGY LIMIT Complot

45-55 I11 IDENTIFY EVALUATED DATA POINTS OPTION. Complot

= 0 - DO NOT IDENTIFY DATA POINTS. Complot

= 1 - IDENTIFY DATA POINTS (BY DRAWING A Complot

SMALL BOX AROUND EACH POINT). Complot

56-66 I11 INTERACTIVE INPUT FLAG Complot

= 0 - NO INTERACTIVE INPUT ALLOWED Complot

= 1 - INTERACTIVE INPUT ALLOWED Complot

\*SETTING THIS OPTION =1 WILL TURN ON THE Complot

MOUSE AFTER EACH PLOT AND ALLOW YOU TO Complot

INTERACTIVELY SPECIFY PLOT LIMITS. Complot

\*IF YOU DO NOT WISH TO INTERACT WITH A PLOT Complot

OR IF YOU HAVE NO INTERACTIVE CAPABILITY Complot

THIS OPTION SHOULD BE SET = 0. Complot

Complot

\*WARNING...DATA POINTS IDENTIFIED OPTION IS Complot

NOT RECOMMENDED FOR PLOTS CONTAINING MANY Complot

(I.E. THOUSANDS) OF DATA POINTS SINCE IT Complot

WILL MERELY INCREASE THE RUNNING TIME OF Complot

THE PROGRAM AND STILL NOT ALLOW ONE TO Complot

ACCURATELY SEE DATA POINTS. Complot

Complot

\*UP TO 100 MAT OR ZA RANGES ARE ALLOWED. Complot

THE LIST IS TERMINATED BY A BLANK LINE. Complot

IF THE UPPER LIMIT IS LESS THAN THE LOWER Complot

LIMIT IT WILL BE SET EQUAL TO THE LOWER Complot

LIMIT. IF THE FIRST RANGE LINE IS BLANK Complot

ALL DATA WILL BE RETRIEVED. IF THE UPPER Complot

MT LIMIT IS ZERO IT WILL BE SET EQUAL TO Complot

999 (NO LIMIT). IF THE UPPER ENERGY LIMIT Complot

IS ZERO IT WILL BE INTREPRETED TO MEAN NO Complot

LIMIT. IF THE FIRST RANGE LINE SPECIFIES Complot

ZERO LOWER AND UPPER MAT OR ZA RANGE IT Complot

WILL TERMINATE THE LIST BE RANGE LINES Complot

(A SECOND BLANK LINE NEED NOT BE INPUT) Complot

AND THE ENTIRE RANGE OF MATS WILL BE Complot

COMPARED FOR THE SPECIFIED MT AND ENERGY Complot

RANGES. Complot

Complot

N+1-M EQUIVALENCES Complot

1- 6 I6 MASTER ZA. Complot

7- 8 I2 MASTER MF. Complot

9-11 I3 MASTER MT. Complot

12-17 I6 EQUIVALENT ZA FROM SECOND FILE. Complot

18-19 I2 EQUIVALENT MF FROM SECOND FILE. Complot

20-22 I3 EQUIVALENT MT FROM SECOND FILE. Complot

23-33 E11.4 MULTIPLICATION FACTOR. ANY EQUATED ZA,MF, Complot

MT DATA WILL BE MULTIPLIED BY THIS FACTOR. Complot

\*THIS OPTION MAY BE USED TO RE-NORMALIZE Complot

THE SECOND CROSS SECTION OR IF COMPARING Complot

ONE CONSTITUENT OF A MIXTURE TO THE MIXED Complot

CROSS SECTION THIS MAY BE USED TO CONVERT Complot

THE SECOND CROSS SECTION TO BARNS PER MIXED Complot

ATOM BY USING A MULTIPLICATION FACTOR WHICH Complot

IS EQUAL TO THE NUMBER OF ATOMS OF THE ONE Complot

CONSTITUENT PER ATOM OF THE MIXTURE. Complot

= 0.0 - ON INPUT WILL BE INTERPRETED AS 1.0 Complot

(WITH THIS CONVENTION THE USER NEED ONLY Complot

INPUT MULTIPLICATION FACTORS IF THEY ARE Complot

NOT 1.0). Complot

\*UP TO 100 MAT OR ZA EQUIVALENCES ARE Complot

ALLOWED. Complot

\*THE LIST IS TERMINATED BY A BLANK LINE. Complot

\*A ZERO INPUT FIELD IMPLIES ALL. TO EQUATE Complot

A GIVEN MT NUMBER TO ANOTHER MT NUMBER YOU Complot

NEED MERELY SPECIFY ZA=0 ON INPUT. Complot

\*NOTE, IN ALL CASES THE TITLE AT TOP OF PLOT Complot

WILL ONLY INDENTIFY MASTER (ZA,MF,MT). THE Complot

USER INPUT TITLES MUST BE USED TO IDENTIFY Complot

THE SECOND REACTION (SEE, EXAMPLE INPUT 4 Complot

BELOW). Complot

Complot

EXAMPLE DEFINITION OF PLOTTER Complot

----------------------------- Complot

2015 - WARNING - THE FOLLOWING DESCRIPTION IS OUT-OF-DATE. Complot

TODAY THE DIMENSIONS OF THE PLOTTER ARE IN INCHES. Complot

Complot

THE FIRST INPUT LINE DEFINES THE DIMENSIONS OF THE PLOTTER BEING Complot

USED IN ANY UNITS (INCHES, CENTIMETERS, MILLIMETERS, ANYTHING) Complot

WHICH APPLY TO THE PLOTTER. IN ADDITION THE FIRST LINE DEFINES Complot

HOW MANY PLOTS SHOULD APPEAR ON EACH FRAME. THE PLOTTING AREA Complot

DEFINED ON THE FIRST INPUT LINE MAY BE SUBDIVIDED INTO ANY NUMBER Complot

OF PLOTS IN THE X AND Y DIRECTION. FOR EXAMPLE, TO PRODUCE A Complot

SERIES OF FRAMES EACH CONTAINING 3 PLOTS IN THE X DIRECTION AND Complot

2 PLOTS IN THE Y DIRECTION (6 PLOTS PER FRAME) COLUMN 45-55 OF Complot

THE FIRST INPUT LINE SHOULD BE 3 AND COLUMNS 56-66 SHOULD BE 2. Complot

Complot

IF THE LOCAL PLOTTER USES DIMENSIONS OF INCHES IN ORDER TO OBTAIN Complot

10 X 10 INCH FRAMES WITH 3 X 2 PLOTS PER FRAME THE FIRST INPUT Complot

LINE SHOULD BE, Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

Complot

IF THE LOCAL PLOTTER USES DIMENSION OF MILLIMETERS THE SAME Complot

PHYSICAL SIZE PLOT MAY BE OBTAINED IF THE FIRST INPUT LINE IS, Complot

Complot

0.0 254.0 0.0 254.0 3 2 Complot

Complot

FOR SIMPLICITY THE FOLLOWING EXAMPLE INPUTS WILL NOT DISCUSS THE Complot

PHYSICAL DIMENSIONS OF THE PLOTTER AND THE FIRST INPUT LINE WILL Complot

IN ALL CASES INDICATE 10 X 10 INCH PLOTS WITH ONLY 1 PLOT PER Complot

FRAME. Complot

Complot

IN THE FOLLOWING EXAMPLES IN ALL CASES THESE OPTIONS WILL BE USED, Complot

1) DASHED GRID - COLUMNS 12-22 OF SECOND INPUT LINE = 1 Complot

2) NO BORDER - COLUMNS 23-33 OF SECOND INPUT LINE = 0 Complot

3) LINE THICKNESS - COLUMNS 34-44 OF SECOND INPUT LINE = -2 Complot

4) OUTPUT MODE - COLUMNS 45-55 OF SECOND INPUT LINE = 3 Complot

5) FIRST PLOT NUMBER - COLUMNS 56-66 OF SECOND INPUT LINE = 1 Complot

Complot

EXAMPLE INPUT 1 Complot

--------------- Complot

RETRIEVE MATS 1023, 1056 AND 1065 THROUGH 1072, MT = 1 AND 2 Complot

(TOTAL AND ELASTIC) FROM THE FIRST INPUT FILE AND COMPARE TO Complot

ANY SECTION FROM THE SECOND FILE THAT HAS THE SAME ZA/MF/MT. ONLY Complot

COMPARE DATA OVER THE ENERGY RANGE 0.1 EV TO 1 KEV. IDENTIFY Complot

THE TWO SETS OF DATA AS ENDF/B-V AND ENDF/B-IV, RESPECTIVELY. Complot

ONLY PLOT THOSE REACTIONS WHICH DIFFER AT ONE OR MORE ENERGIES Complot

BY MORE THAN 1 PER-CENT (NOTE, 1 PER-CENT = 0.01 AS INPUT Complot

FRACTION). NO EQUIVALENT REACTIONS ARE SPECIFIED. FILERNAMES Complot

ARE STANDARD (THSE CAN EITHER BE EXPLICITLY INCLUDED, OR SIMPLY Complot

LEFT BLANK). Complot

Complot

THE FOLLOWING 12 INPUT LINES ARE REQUIRED. Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

ENDFB.IN1 Complot

ENDFB.IN2 Complot

0 1 0 -2 3 1 Complot

0.01 0.0 Complot

ENDF/B-V DATA (STANDARD) Complot

ENDF/B-IV DATA Complot

1023 3 1 0.1 3 2 1000.0 0 Complot

1056 3 1 0.1 3 2 1000.0 0 Complot

1065 3 1 0.1 1072 3 2 1000.0 0 Complot

(TERMINATES REQUEST LIST) Complot

(TERMINATES EQUIVALENCE LIST) Complot

Complot

EXAMPLE INPUT 2 Complot

--------------- Complot

TO USE ALL OF THE SAME OPTIONS AS SPECIFIED IN EXAMPLE INPUT 1, Complot

EXCEPT TO RETRIEVE U-235, U-238 AND PU-239 THROUGH PU-242 THE Complot

FOLLOWING 12 INPUT LINES ARE REQUIRED. Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

ENDFB.IN1 Complot

ENDFB.IN2 Complot

1 1 0 -2 3 1 Complot

0.01 0.0 Complot

ENDF/B-V DATA (STANDARD) Complot

ENDF/B-IV DATA Complot

92235 3 1 0.1 3 2 1000.0 0 Complot

92238 3 1 0.1 3 2 1000.0 0 Complot

94239 3 1 0.1 94242 3 2 1000.0 0 Complot

(TERMINATES REQUEST LIST) Complot

(TERMINATES EQUIVALENCE LIST) Complot

EXAMPLE INPUT 3 Complot

--------------- Complot

TO USE ALL OF THE SAME OPTIONS AS SPECIFIED IN EXAMPLE INPUT 1, Complot

EXCEPT TO RETRIEVE AND COMPARE ALL MATS THE FOLLOWING 10 INPUT Complot

LINES ARE REQUIRED. Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

ENDFB.IN1 Complot

ENDFB.IN2 Complot

0 1 0 -2 3 1 Complot

0.01 0.0 Complot

ENDF/B-V DATA (STANDARD) Complot

ENDF/B-IV DATA Complot

1 1 1 0.0 999999999 0.0 0 Complot

(TERMINATES REQUEST LIST) Complot

(TERMINATES EQUIVALENCE LIST) Complot

NOTE, ZERO LOWER AND UPPER Complot

MAT LIMITS INDICATES NO LIMIT. Complot

Complot

EXAMPLE INPUT 4 Complot

--------------- Complot

RETRIEVE U-235 AND EQUATE THE FISSION CROSS SECTION (MT=18) ON Complot

THE MASTER FILE TO CAPTURE (MT=102) ON THE SECOND FILE. PLOT Complot

THE CAPTURE, FISSION AND CAPTURE TO FISSION RATIO OVER THE ENERGY Complot

RANGE 0.0253 EV TO 1 KEV. THE FOLLOWING 11 INPUT LINES ARE Complot

REQUIRED. Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

ENDFB.IN1 Complot

ENDFB.IN2 Complot

1 1 0 -2 3 1 Complot

0.01 0.0 Complot

FISSION Complot

CAPTURE Complot

92235 3 18 0.0253 92235 3 18 1000.0 0 Complot

(TERMINATES REQUEST LIST) Complot

92235 3 18 92235 3102 (MULTIPLICATION OF 1.0 INFERRED) Complot

(TERMINATES EQUIVALENCE LIST) Complot

Complot

EXAMPLE INPUT 5 Complot

--------------- Complot

IN DIFFERENT VERSIONS OF THE ENDF/B FORMAT DIFFERENT MT NUMBERS Complot

ARE ASSIGNED TO THE SAME REACTION. FOR EXAMPLE, IN ENDF/B-V AND Complot

EARLIER VERSIONS OF ENDF/B THE PHOTOELECTRIC CROSS SECTION IS Complot

MT=602, WHILE IN ENDF/B-VI IT IS MT=522. IN ORDER TO COMPARE Complot

ASSUMING THAT THE MASTER IS ENDF/B-VI AND THE OTHER ENDF/B FILE Complot

IS ENDF/B-V (OR EARLIER) YOU MAY EQUATE MT=522 TO 602. Complot

Complot

WHEN COMPARING PHOTOELECTRIC CROSS SECTIONS WE EXPECT THERE TO BE Complot

LARGE DIFFERENCES NEAR EDGES, SINCE IT IS UNLIKELY THAT TWO Complot

INDEPENDENT EVALUATIONS USE EXACTLY THE SAME EDGE ENERGIES. FROM Complot

A PRACTICAL VIEWPOINT THESE DIFFERENCES ARE NOT IMPORTANT IF THEY Complot

ONLY OCCUR OVER NARROW ENERGY RANGES NEAR ENERGIES. HOWEVER THESE Complot

LARGE DIFFERENCES MAY MAKE IT DIFFICULT TO SEE DIFFERENCES OVER Complot

OTHER ENERGY RANGES, WHICH MAY BE IMPORTANT. IN ORDER TO BE ABLE Complot

TO SEE IMPORTANT DIFFERENCES IN THE FOLLOWING COMPARISON WE WILL Complot

CONSTRAIN THE PLOTTED RATIO TO THE RANGE ABOUT 0.9 TO 1.1 IN Complot

ORDER TO BE ABLE TO SEE DIFFERENCES OF UP TO 10 PER-CENT. WE WILL Complot

DO THIS BY SPECIFYING A MAXIMUM RATIO OF 1.1, WHICH WILL IN TURN Complot

DEFINE A MINIMUM RATIO OF 1/1.1, OR ABOUT 0.9. Complot

Complot

IN ORDER TO COMPARE THE PHOTOELECTRIC CROSS SECTION FOR ALL Complot

MATERIALS THE FOLLOWING 11 INPUT LINES ARE REQUIRED. Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

ENDFB.IN1 Complot

ENDFB.IN2 Complot

0 1 0 -2 3 1 Complot

0.01 1.1 Complot

ENDF/B-VI Complot

ENDF/B-V Complot

023522 999923522 0 Complot

(TERMINATES REQUEST LIST) Complot

023522 023602 (MULTIPLICATION OF 1.0 INFERRED) Complot

(TERMINATES EQUIVALENCE LIST) Complot

Complot

EXAMPLE INPUT 6 Complot

--------------- Complot

THE SAME EXAMPLE AS ABOVE, EXCEPT THAT DIFFERENT FILENAMES WILL Complot

BE USED TO READ THE DATA FROM A FILE TREE STRUCTURE. THE FOLLOWING Complot

11 INPUT LINES ARE REQUIRED. Complot

Complot

0.0 10.0 0.0 10.0 3 2 Complot

/Evaluated/ENDFB6/PHOTON.IN Complot

/Evaluated/ENDFB5/PHOTON.IN Complot

0 1 0 -2 3 1 Complot

0.01 1.1 Complot

ENDF/B-VI Complot

ENDF/B-V Complot

023522 999923522 0 Complot

(TERMINATES REQUEST LIST) Complot

023522 023602 (MULTIPLICATION OF 1.0 INFERRED) Complot

(TERMINATES EQUIVALENCE LIST) Complot

Complot

EXAMPLE INPUT 7 Complot

--------------- Complot

THE OUTPUT FOR ALL OF THE ABOVE EXAMPLES ARE ORIENTED WITH X Complot

HORIZONTAL AND Y VERTICAL. TO CHANGE THE ORIENTATION OF THE PLOTS Complot

YOU NEED MERELY SPECIFY A NEGATIVE UPPER X LIMIT OF THE SIZE OF Complot

THE PLOTS ON THE FIRST INPUT LINE. Complot

Complot

THE FOLLOWING EXAMPLE IS EXACTLY THE SAME AS THE ABOVE EXAMPLE, Complot

EXCEPT THAT THE ORIENTATION OF THE PLOTS HAS BEEN CHANGED. THE Complot

FOLLOWING 11 INPUT LINES ARE REQUIRED. Complot

Complot

0.0 -10.0 0.0 10.0 3 2 Complot

/Evaluated/ENDFB6/PHOTON.IN Complot

/Evaluated/ENDFB5/PHOTON.IN Complot

0 1 0 -2 3 1 Complot

0.01 1.1 Complot

ENDF/B-VI Complot

ENDF/B-V Complot

023522 999923522 0 Complot

(TERMINATES REQUEST LIST) Complot

023522 023602 (MULTIPLICATION OF 1.0 INFERRED) Complot

(TERMINATES EQUIVALENCE LIST) Complot

Complot

===== PLOTTER/GRAPHICS TERMINAL INTERFACE ============================= Complot

Complot

NON-INTERACTIVE Complot

------------------------------------------------------------------ Complot

THIS PROGRAM USES A SIMPLE CALCOMP LIKE INTERFACE INVOLVING Complot

ONLY 5 SUBROUTINES, Complot

Complot

STARPLOT - INITIALIZE PLOTTER Complot

NEXTPLOT - CLEAR SCREEN FOR NEXT PLOT Complot

ENDPLOTS - TERMINATE PLOTTING Complot

Complot

PLOT(X,Y,IPEN) - DRAW OR MOVE FROM LAST LOCATION TO (X,Y), Complot

END OF CURRENT PLOT OR END OF PLOTTING. Complot

IPEN = 2 - DRAW Complot

= 3 - MOVE Complot

Complot

PEN(IPEN) - SELECT COLOR. Complot

IPEN- COLOR = 1 TO N (N = ANY POSITIVE INTEGER) Complot

Complot

BOXCOLOR(X,Y,IFILL,IBORDER) - FILL A RECTANGLE WITH COLOR Complot

X,Y = DEFINE THE CORNERS OF THE BOX Complot

IFILL = COLOR TO FILL BOX WITH Complot

IBORDER = COLOR OF BORDER OF BOX Complot

Complot

INTERACTIVE Complot

------------------------------------------------------------------ Complot

THIS PROGRAM INCLUDES AN INTERACTIVE INTERFACE FOR USE WITH A Complot

MOUSE. THE INTERFACE INVOLVES 2 SUBROUTINE, Complot

Complot

INTERACT(MYACTION) - WHETHER OR NOT INTERACTION Complot

MYACTION = 0 - NO (RETURNED BY INTERACT) Complot

= 1 - YES (RETURNED BY INTERACT) Complot

Complot

MOUSEY(IWAY,XI,YI,IWAY1,IWAY2) - READ POSITION OF MOUSE Complot

IWAY = 0 - NO INPUT Complot

= 1 - LEFT BUTTON Complot

= 2 - MIDDLE BUTTON Complot

= 3 - RIGHT BUTTON Complot

= 4 - KEYBOARD INPUT Complot

XI = X POSITION IN LOCAL UNITS Complot

YI = Y POSITION IN LOCAL UNITS Complot

IWAY1 = MINIMUM ALLOWABLE IWAY Complot

IWAY2 = MAXIMUM ALLOWABLE IWAY Complot

Complot

AS USED BY THIS PROGRAM IWAY1 = 1 Complot

IWAY2 = 4 Complot

KEYBOARD INPUT (IWAY=4) MEANS NO ZOOMED PLOT REQUESTED. Complot

MOUSE INPUT (IWAY=1 TO 3) MEANS A ZOOMED PLOT IS REQUESTED. Complot

MOUSEY WILL BE CALLED ONCE TO SEE IF A ZOOMED PLOT IS REQUESTED. Complot

IF IT IS XI WILL BE USED TO DEFINE ONE X (E.G., ENERGY) LIMIT OF Complot

THE ZOOMED PLOT. MOUSEY WILL THEN BE CALLED A SECOND TIME TO Complot

DEFINE A SECOND XI TO DEFINE THE OTHER X LIMIT OF THE ZOOMED Complot

PLOT. Complot

Complot

IF YOU DO NOT WANT INTERACTION YOU SHOULD INCLUDE THE FOLLOWING Complot

SUBROUTINES IN YOUR GRAPHIC INTERFACE, Complot

Complot

SUBROUTINE INTERACT(MYACTION) Complot

MYACTION=0 Complot

RETURN Complot

END Complot

SUBROUTINE MOUSEY(IWAY,XI,YI,IWAY1,IWAY2) Complot

IWAY=4 Complot

XI=0.0 Complot

YI=0.0 Complot

RETURN Complot

END Complot

Complot

ALTERNATIVE INTERACTIVE Complot

------------------------------------------------------------------ Complot

IF YOU DO NOT HAVE A MOUSE BUT WOULD STILL LIKE TO INTERACTIVE Complot

INPUT YOU CAN REPLACE SUBROUTINE ACTION IN THIS PROGRAM. Complot

Complot

AS DISTRIBUTED SUBROUTINE ACTION USES A MOUSE TO DEFINE LOWER Complot

AND UPPER ENERGY (OR X) LIMITS WHICH ARE USED TO PRODUCE THE Complot

NEXT PLOT. A CALL TO ACTION IS OF THE FORM, Complot

Complot

CALL ACTION(KACTV,XACT1,XACT2) Complot

Complot

KACTV = 0 - NO INTERACTIVE INPUT Complot

= 1 - INTERACTIVE INPUT Complot

XACT1 = LOWER ENERGY LIMIT Complot

XACT2 = UPPER ENERGY LIMIT Complot

Complot

IF THERE IS NO INTERACTIVE INPUT THE PROGRAM WILL PROCEED TO THE Complot

NEXT PLOT REQUESTED BY NON-INTERACTIVE INPUT. Complot

Complot

IF THERE IS INTERACTIVE INPUT THE PROGRAM WILL USE XACT1 AND Complot

XACT2 TO DEFINE THE ENERGY LIMITS OF THE NEXT PLOT USING THE Complot

SAME DATA AS APPEARED ON THE LAST PLOT. AS WITH NON-INTERACTIVE Complot

INPUT, IF YOU SELECT AN ENERGY RANGE WHERE THE MAXIMUM DIFFERENCE Complot

IS LESS THAN THAT SPECIFIED BY INPUT NO PLOT WILL BE PRODUCED Complot

AND THE CODE WILL PROCEED TO THE NEXT PLOT REQUESTED BY Complot

NON-INTERACTIVE INPUT. Complot

Complot

YOU CAN REPLACE SUBROUTINE ACTION FOLLOWING THE ABOVE CONVENTIONS Complot

TO ALLOW INTERACTION VIA DIRECT READ OF X LIMITS, LIGHTPEN OR Complot

WHATEVER FACILITIES YOU HAVE AVAILABLE. Complot

Complot

INTERFACING Complot

------------------------------------------------------------------ Complot

IN ORDER TO INTERFACE THIS PROGRAM FOR USE ON ANY PLOTTER WHICH Complot

DOES NOT USE THE ABOVE CONVENTIONS IT IS MERELY NECESSARY FOR THE Complot

THE USER TO WRITE 5 SUBROUTINES DESCRIBED ABOVE AND TO THEN CALL Complot

THE LOCAL EQUIVALENT ROUTINES. Complot

Complot

COLOR PLOTS Complot

------------------------------------------------------------------ Complot

TO SELECT PLOTTING COLORS SUBROUTINE PEN (DESCRIBED ABOVE) IS USED Complot

TO SELECT ONE OF THE AVAILABLE COLORS. WHEN RUNNING ON A MAINFRAME Complot

USING AN IBM GRAPHICS TERMINAL OR ON AN IBM-PC USING A HEWLETT- Complot

PACKARD PLOTTER THE GRAPHICS INTERFACE (DESCRIBED ABOVE) WILL Complot

PRODUCE COLOR PLOTS. Complot

Complot

BLACK AND WHITE PLOTS Complot

------------------------------------------------------------------ Complot

WHEN PRODUCING BLACK AND WHITE HARDCOPY ON A MAINFRAME THE USER Complot

SHOULD ADD A DUMMY SUBROUTINE PEN TO THE END OF THE PROGRAM TO Complot

IGNORE ATTEMPTS TO CHANGE COLOR. ADD THE FOLLOWING SUBROUTINE, Complot

Complot

SUBROUTINE PEN(IPEN) Complot

RETURN Complot

END Complot

Complot

CHARACTER SET Complot

------------------------------------------------------------------ Complot

THIS PROGRAM USES COMPUTER AND PLOTTER DEVICE INDEPENDENT SOFTWARE Complot

CHARACTERS. THIS PROGRAM COMES WITH A FILE THAT DEFINES THE PEN Complot

STROKES REQUIRED TO DRAW ALL CHARACTERS ON AN IBM KEYBOARD (UPPER Complot

AND LOWER CASE CHARACTERS, NUMBERS, ETC.) PLUS AN ALTERNATE SET OF Complot

ALL UPPER AND LOWER CASE GREEK CHARACTERS AND ADDITIONAL SPECIAL Complot

SYMBOLS. Complot

Complot

THE SOFTWARE CHARACTER TABLE CONTAINS X AND Y AND PEN POSITIONS TO Complot

DRAW EACH CHARACTER. IF YOU WISH TO DRAW ANY ADDITIONAL CHARACTERS Complot

OR TO MODIFY THE FONT OF THE EXISTING CHARACTERS YOU NEED ONLY Complot

MODIFY THIS TABLE. Complot

Complot

CONTROL CHARACTERS Complot

------------------------------------------------------------------ Complot

IN THE SOFTWARE CHARACTER TABLE ALL CHARACTERS TO BE PLOTTED WILL Complot

HAVE PEN POSITION = 2 (DRAW) OR = 3 (MOVE). IN ADDITION THE TABLE Complot

CURRENTLY CONTAINS 4 CONTROL CHARACTERS, Complot

Complot

PEN POSITION = 0 Complot

---------------- Complot

SHIFT THE NEXT PRINTED CHARACTER BY X AND Y. 3 CONTROL CHARACTERS Complot

ARE PRESENTLY INCLUDED IN THE SOFTWARE CHARACTER TABLE TO ALLOW Complot

SHIFTING. Complot

Complot

{ = SHIFT UP (FOR SUPERSCRIPTS..............X= 0.0, Y= 0.5) Complot

} = SHIFT DOWN (FOR SUBSCRIPTS..............X= 0.0, Y=-0.5) Complot

\ = SHIFT LEFT 1 CHARACTER (FOR BACKSPACE...X=-1.0, Y= 0.0) Complot

Complot

PEN POSITION =-1 Complot

---------------- Complot

SELECT THE NEXT PRINTED CHARACTER FROM THE ALTERNATE CHARACTER Complot

SET. AT PRESENT THIS CONTROL CHARACTER IS, Complot

Complot

] = SWITCH TO ALTERNATE CHARACTER SET Complot

Complot

THESE 4 CONTROL CHARACTERS ARE ONLY DEFINED BY THE VALUE OF THE Complot

PEN POSITION IN THE SOFTWARE CHARACTER TABLE (I.E., THEY ARE NOT Complot

HARD WIRED INTO THIS PROGRAM). AS SUCH BY MODIFYING THE SOFTWARE Complot

CHARACTER TABLE THE USER HAS THE OPTION OF DEFINING ANY CONTROL Complot

CHARACTERS TO MEET SPECIFIC NEEDS. Complot

Complot

THESE CHARACTERS MAY BE USED IN CHARACTER STRINGS TO PRODUCE Complot

SPECIAL EFFECTS. FOR EXAMPLE, TO PLOT SUBSCRIPT 5, B, SUPERSCRIPT Complot

10 USE THE STRING, Complot

Complot

}5B{1{0 Complot

Complot

TO PLOT B, SUBSCRIPT 5 AND SUPERSCRIPT 10 WITH THE 5 DIRECTLY Complot

BELOW THE 1 OF THE 10 WE CAN USE THE BACKSPACE CHARACTER TO Complot

POSITION THE 1 DIRECTLY ABOVE THE 5 USING THE STRING, Complot

Complot

B}5\{1{0 Complot

Complot

TO PLOT UPPER CASE GREEK GAMMA FOLLOWED BY THE WORD TOTAL (I.E., Complot

RESONANCE TOTAL WIDTH) USE THE STRING. Complot

Complot

]G TOTAL Complot

Complot

NOTE, WHEN THESE CONTROL CHARACTERS ARE USED THEY ONLY EFFECT THE Complot

NEXT 1 PRINTED CHARACTER (SEE, ABOVE EXAMPLE OF PLOTTING SUPER- Complot

SCRIPT 10 WHERE THE SHIFT UP CONTROL CHARACTER WAS USED BEFORE THE Complot

1 AND THEN AGAIN BEFORE THE 0 AND THE BACKSPACE AND SHIFT UP Complot

CONTROL CHARACTERS WERE USED IN COMBINATION). Complot

Complot

IF THESE 4 CONTROL CHARACTERS ARE NOT AVAILABLE ON YOUR COMPUTER Complot

YOU CAN MODIFY THE SOFTWARE CHARACTER TABLE TO USE ANY OTHER 4 Complot

CHARACTERS THAT YOU DO NOT NORMALLY USE IN CHARACTER STRINGS (FOR Complot

DETAILS SEE THE SOFTWARE CHARACTER TABLE). Complot

Complot

STANDARD/ALTERNATE CHARACTER SETS Complot

------------------------------------------------------------------ Complot

THE SOFTWARE CHARACTER TABLE CONTAINS 2 SETS OF CHARACTERS WHICH Complot

ARE A STANDARD SET (ALL CHARACTERS ON AN IBM KEYBOARD) AND AN Complot

ALTERNATE SET (UPPER AND LOWER CASE GREEK CHARACTERS AND SPECIAL Complot

CHARACTERS). TO DRAW A CHARACTER FROM THE ALTERNATE CHARACTER SET Complot

PUT A RIGHT BRACKET CHARACTER (]) BEFORE A CHARACTER (SEE THE Complot

ABOVE EXAMPLE AND THE SOFTWARE CHARACTER TABLE FOR DETAILS). THIS Complot

CONTROL CHARACTER WILL ONLY EFFECT THE NEXT 1 PLOTTED CHARACTER. Complot

Complot

SUB AND SUPER SCRIPTS Complot

------------------------------------------------------------------ Complot

TO DRAW SUBSCRIPT PRECEED A CHARACTER BY }. TO DRAW SUPERSCRIPT Complot

PRECEED A CHARACTER BY { (SEE THE ABOVE EXAMPLE AND THE SOFTWARE Complot

CHARACTER TABLE FOR DETAILS). THESE CONTROL CHARACTER WILL ONLY Complot

EFFECT THE NEXT 1 PLOTTED CHARACTER. Complot

Complot

BACKSPACING Complot

------------------------------------------------------------------ Complot

TO BACKSPACE ONE CHARACTER PRECEED A CHARACTER BY \ (SEE, THE Complot

ABOVE EXAMPLE AND THE SOFTWARE CHARACTER TABLE FOR DETAILS). THIS Complot

CONTROL CHARACTER WILL PERFORM A TRUE BACKSPACE AND WILL EFFECT Complot

ALL FOLLOWING CHARACTERS IN THE SAME CHARACTER STRING. Complot

Complot

PLOT DIMENSIONS Complot

--------------- Complot

ARE DEFINED BY USER INPUT. INTERNALLY THE PROGRAM WILL CREATE A Complot

PLOT IN APPROXIMATELY A4 OR 8-1/2 BY 11 INCH FORMAT. DURING Complot

OUTPUT THE PLOT IS TRANSFORMED TO THE UNITS (INCHES, CENTIMETERS, Complot

MILLIMETERS, WHATEVER) OF THE PLOTTER BEING USED AND OUTPUT. Complot

Complot

===== PLOTTER/GRAPHICS TERMINAL INTERFACE ============================= Complot

======================================================================= Complot