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====================================================================== Endf2c
                                                                       Endf2c
     Program ENDF2C                                                    Endf2c
     ==============                                                    Endf2c
     Convert ENDF Data to Standard FORTRAN, C and C++ Format.          Endf2c
                                                                       Endf2c
     Version 2014-1 Feb. 2014 * Initial version.                       Endf2c
             2014-2 Oct. 2014 * Changed from D to E exponential form   Endf2c
                                to improve compatibility between       Endf2c
                                computer languages.                    Endf2c
             2015-1 Jan. 2015 * General updates for release with       Endf2c
                                PREPRO2015.                            Endf2c
                              * Changed ENDF data filenames from ENDF2C Endf2c
                                to ENDFB, to agree with PREPRO default Endf2c
                                definitions.                           Endf2c
                              * Added code name (to be compatible      Endf2c
                                with PREPRO output), but NOT TIME (to  Endf2c
                                keep this code as computer independent Endf2c
                                as possible).                          Endf2c
             2017-1 May  2017 * Updated based on user feedbsck         Endf2c
             2018-1 Jan. 2018 * Added on-line output for ALL ENDERROR  Endf2c
                                                                       Endf2c
     Purpose                                                           Endf2c
     ======================================================================= Endf2c
     This code is designed for,                                        Endf2c
     1) ENDF Data in any ENDF format = ENDF-1 through ENDF-6.          Endf2c
     2) On any type of computer = 32 or 64 bit system/compiler         Endf2c
                                                                       Endf2c
     This code tries to keep things as simple as possible              Endf2c
     1) There are NO INPUT PARAMETERS.                                 Endf2c
     2) It reads  an ENDF formatted file named ENDFB.IN                Endf2c
     3) It writes an ENDF formatted file named ENDFB.OUT               Endf2c
     4) It writes a report file named          ENDF2C.LST              Endf2c
                                                                       Endf2c
     Author's Message                                                  Endf2c
     ----------------                                                  Endf2c
     I consider insuring that ENDF data is in a standard, officially   Endf2c
     approved format for FORTRAN, C and C++ is SO IMPORTANT this code  Endf2c
     does only one thing - and only one thing - and it does it in the  Endf2c
     simplest possible manner - efficiency is NOT a consideration -    Endf2c
     ONLY accuracy and general utility of the ENDF data is considered. Endf2c
                                                                       Endf2c
     Method                                                            Endf2c
     ------                                                            Endf2c
     Other codes that attempt to do the same thing - including codes   Endf2c
     written be me decades ago - are very complicated, and therefore   Endf2c
     ERROR PRONE because they try to deal with each and every variant  Endf2c
     in which data can be coded in the ENDF format. Needless to say    Endf2c
     this means that every time the ENDF formats and procedures change Endf2c
     these codes MUSE also be changed.                                 Endf2c
                                                                       Endf2c
     In contrast, ENDF2C uses my almost 50 years of experience dealing Endf2c
     with the ENDF format to realize that except for the comments at   Endf2c
     the beginning for each evaluation (MF/MT=1/451), every line of    Endf2c
     ENDF data is IDENTICAL - in every version of the ENDF format, from Endf2c
     the original ENDF to today's ENDF-6. So to translate ENDF data    Endf2c
     into an official format I do not have to consider differences in  Endf2c
     each section (MF/MT) of data.                                     Endf2c
                                                                       Endf2c
     Every line of ENDF is divided into 6 fields, each 11 columns wide. Endf2c
     Each of the 6 fields is either, blank, integer or floating point. Endf2c
     Floating point fields ALL include a decimal point (.). So that ALL Endf2c
     this code does is convert every floating point field to standard  Endf2c
     format.                                                           Endf2c
                                                                       Endf2c
     In order to insure that this PRESERVES the accuracy of the data   Endf2c
     this is done by reading and writing each ENDF line as characters. Endf2c
     Blank and integer fields are copied exactly as read. ALL floating Endf2c
     point number that are read are converted internally from character Endf2c
     to floating point - they are then converted back into characters  Endf2c
     in a standard, officially approved format, for output.            Endf2c
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                                                                        Endf2c
    As a last step to insure the accuracy of results the characters     Endf2c
    to be output are again converted from characters to floating        Endf2c
    point, and the numerical value that is output is compared to the    Endf2c
    numerical value originally read, and if there is ANY DIFFERENCE     Endf2c
    the characters strings read and written are listed in the output:   Endf2c
    the characters strings read and written as well as the difference   Endf2c
    is listed in the output report (ENDF2C.LST) and on the screen.      Endf2c
                                                                        Endf2c
    Running Time                                                        Endf2c
    ------------                                                        Endf2c
    It takes only seconds to translate an ENDF formatted evaluation,    Endf2c
    so running time need not be a consideration. Concentrate on         Endf2c
    keeping it simple and reliable - that should be your focus.         Endf2c
                                                                        Endf2c
    Documentation                                                       Endf2c
    -------------                                                       Endf2c
    ALL of my codes that process ENDF data and change it in ANY WAY     Endf2c
    document what they have done by adding comment lines at the end     Endf2c
    of the comment section (MF/MT=1/451) of each evaluation. This       Endf2c
    allows data users to determine the pedigree of the data they are    Endf2c
    using, by reading these comments. This code documents what is has   Endf2c
    done by adding the following 2 comment lines.                       Endf2c
                                                                        Endf2c
 ***************** Program ENDF2C (Version 2018-1) ***************      Endf2c
      Convert ENDF Data to Standard FORTRAN, C and C++ Format           Endf2c
                                                                        Endf2c
    WARNING - This documentation is IMPORTANT to data users and it      Endf2c
    should not be deleted.                                              Endf2c
                                                                        Endf2c
    Written by                                                          Endf2c
    ----------------------------------                                  Endf2c
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========================================================================Endf2c
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