INTERNATIONAL ATOMIC ENERGY AGENCY

NUCLEAR DATA SERVICES

DOCUMENTATION SERIES OF THE IAEA NUCLEAR DATA SECTION

IAEA-NDS-147
Rev. 1 Feb. 1992

Nuclear Masses (RNPL-A)

Data file by P. Möller

Summary documentation

by

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Abstract: This document summarizes contents and format of a data file of nuclear masses received from P. Möller, Los Alamos National Laboratory, Sept. 1991. The data file is available free of charge from the IAEA Nuclear Data Section upon request, on either magnetic tape or a PC diskette.

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Nuclear Masses (RNPL-A)

A data file received from P. Möller, Los Alamos National Laboratory, Sept. 1991.

The data file compares the nuclear masses computed by P. Möller et al. (Ref. 1) with the masses compiled by A.H. Wapstra et al. (Ref. 2).

References:

1. P. Möller, W.D. Myers, W.J. Swiatecki and J. Treiner, Nuclear Mass Formula with a Finite-Range Droplet Model and a Folded-Yukawa Single-Particle Potential, At. Nucl. Data Tables 39 (1988) 225-233.
   (See attachment.)

2. A.H. Wapstra, G. Audi, R. Hoekstra, Atomic Masses from (Mainly) Experimental Data, At. Nucl. Data Tables 39 (1988) 281-287.

Description of contents and format:

The data library, which constitutes part A of the Reference Nuclear Parameter Library (RNPL-A), consists of calculated, and in most cases also measured, ground-state masses of 4685 nuclei ranging from $^{16}0$ to $^{318}122$. Each record of the file contains Z, N, A, ESHPAC, CMASS, EMASS, DIFF and EERR, as defined below, in a (3I5, 5F10.3) format. Here, ESHPAC is the calculated shell-plus-pairing correction; CMASS is the mass excess calculated by P. Möller et al. (Ref. 1), using a nuclear mass formula with a finite-range droplet model and a folded-Yukawa single-particle potential; EMASS is the experimental mass excess, compiled by A.H. Wapstra et al. (Ref. 2); DIFF is the difference EMASS-CMASS; EERR is the error given in Ref. 2 for the experimental mass.

The library has a size of 221 kbytes or 4685 records with a record length of 80. The data file is available free of charge from the IAEA Nuclear Data Section upon request, on either magnetic tape or PC diskette.