

Experimental Unevaluated Nuclear Data List (XUNDL) - A New Database at BNL

David Winchell(BNL) and Balraj Singh (McMaster)

Access:

Internet: <http://www.nndc.bnl.gov/nndc/xundl/>

Telnet: <bn1nd2.dne.bnl.gov>

Motivation:

As a result of discussions at meetings of the High-spin task force* of the US DOE Nuclear Data Program, it became apparent that some data needs of the nuclear structure research community are not being adequately met by the ENSDF database. One such need is prompt computer access to those level-scheme data from recently completed research which have not yet been added to ENSDF, primarily in the high-spin area. In order to address that issue, it was proposed that a supplementary database be implemented to provide such data in compiled (unevaluated) form.

Contents:

The data sets submitted to this database will generally be those from recent studies which have not yet been incorporated into ENSDF. Sources of data for XUNDL would include: Formal publications, supplements to formal publications, published conference proceedings, theses, preprints, and unpublished (but fully analyzed) level schemes. While emphasis will be placed on high-spin level schemes, the scope of the database will extend to low-spin reaction studies and decay data.

Formats:

Each data set in XUNDL will contain mainly the results of a single publication or closely related publications. The data format for XUNDL data sets is identical to that for ENSDF. The documentation will include the source reference in addition to NSR keynumbers (if available), names of compilers and the date of submission of compilation. Data sets based on unpublished results may not have an NSR keynumber. To ensure conformity with ENSDF format, each data set should be run through format checking/analysis codes e.g. FMTCHK, GTOL, etc. Corrections or revisions to an existing data set in XUNDL can be made at the request of compilers, evaluators or researchers.

Contributions:

The contributors to XUNDL will include nuclear data (ENSDF) evaluators and researchers. Some data may be compiled by undergraduate students working under the supervision of an ENSDF evaluator. While evaluation work on a mass chain is in progress, an ENSDF evaluator may wish to contribute to this database a data set that is based essentially on a single publication. It is expected that evaluators would submit data sets in ENSDF format. However, researchers can submit their results in any format, preferably in some computer format. The coordinators of the database would translate such files into ENSDF format. To ensure consistency in format of data presentation, all contributions at present should go to one of the coordinators of the database: David Winchell (winchell@bnl.gov) or Balraj Singh (balraj@McMaster.ca).

Dissemination:

Data sets indexed by mass number, nuclide and reference (NSR) keynumbers are currently accessible from BNL (via www or telnet). It will also be available via Isotope Explorer at LBNL and RADWARE database at ORNL.

Current Status:

The XUNDL database was set up at BNL in December 1998. As of March 31, the database contains 153 data sets for 134 nuclides (from ^{43}Ca to ^{254}No) spread over 83 mass chains. Currently, most data sets are from previously published data (mostly during 1996-1999); however, it is expected that the research community will, in future, play an increasing role in contributing data from their recently-completed studies.

We thank Coral Baglin (LBNL) for detailed comments on the text.

* High-spin task force: Following its inception in July 1998, it convened on August 13, 98 and October 29, 98. Current members are: Frank Chu (LBNL), Jolie Cizewski (Rutgers), Paul Fallon (Chair, LBNL), Robert Janssens (ANL), David Radford (ORNL), Mark Riley (FSU), Balraj Singh (McMaster U.), David Winchell (BNL).