

## United States nuclear structure data program (USNDP) and evaluated nuclear structure data file (ENSDF) at Texas A&M University

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Since 2005 we have been an important partner in the nationwide United States Nuclear Data Program (USNDP), which is part of the Nuclear Structure and Decay Data (NSDD) international nuclear data-evaluation network. USNDP is in fact the backbone of the NSDD network, making the greatest effort in completion of the goals of the nuclear-structure data-evaluation communities. Nuclear data evaluation is a national-interest activity financed by DOE, through which relevant nuclear-science results in virtually all world publications are retrieved and put together in a large Evaluated Nuclear Structure Data File (ENSDF) database according to general policies, a set of rules that make possible a standard approach through which the data are uniformly evaluated.

This activity is carried by a relatively small group of professionals located mostly in national institutes but also hosted by a few universities. The nuclear data network is the nodal point for the wide dissemination of nuclear knowledge to many users, from those in basic science to those engaged in commercial applications in American and international businesses. The output is published in the Nuclear Data Sheets, an Elsevier publication, and also is disseminated by different on-line databases, which can be retrieved at the NNDC site (<http://www.nndc.bnl.gov>), IAEA Vienna's site (<http://www-nds.iaea.org>) and several other locations.

For ten years now at the Cyclotron Institute of Texas A&M we have completed the evaluation of mass chains covering a large part of the nuclear chart. We have published in Nuclear Data Sheets the superheavy  $A=252$  mass chain [1]; the very data-rich mid-mass chains,  $A=140$  [2],  $A=141$  [3],  $A=147$  [4] and  $A=148$  [5]; the relatively lighter chains,  $A=97$  [6] and  $A=84$  [7]; and, in collaboration with B. Singh and a group of authors from McMaster University, Canada, we also published the  $A=77$  [8],  $A=37$  [9],  $A=36$  [10], and  $A=34$  [11] chains. Another two big mass chains,  $A=158$  and  $A=157$ , have been submitted, the former in 2013 and the latter in 2014; both are still in the review process. Our total effort is 0.67 FTE per year.

Beginning in January 2015 we started a new evaluation of  $A=140$ , a mass chain that we first evaluated a decade ago. The chain includes Sb, Te, I, Xe, Cs, Ba, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, and Ho, a total of 17 isobars. More than 130 papers have been published since January 2006, when our previous evaluation closed. This work is in progress.

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[5] N. Nica, Nucl. Data Sheets **117**, 1 (2014).

- [6] N. Nica, Nucl. Data Sheets **111**, 525 (2010).
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- [8] B. Singh and N. Nica, Nucl. Data Sheets **113**, 1115 (2012).
- [9] J. Cameron, J. Chen, B. Singh, and N. Nica, Nucl. Data Sheets **113**, 365 (2012).
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