

Status report of NSCL/MSU data center (April 2015 – April 2017)

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1. Overview of NSCL/MSU data center

The data center at NSCL/MSU became a member of the NSDD network at the 2015 IAEA NSDD meeting at Vienna and it plays a unique role as part of the FRIB/NSCL facilities. NSCL/MSU data center took over the responsibility for the evaluation of fourteen mass chains ($A = 31 - 44$) and it also compiles data for XUNDL data base, including all data coming out from NSCL and FRIB in the future. In addition, it also helps develop and improve the analysis and utility tools used in data compilation and evaluation.

Current members: Michael Thoennessen (program manager) and Jun Chen

2. ENSDF evaluations and XUNDL compilations

In addition to the primary responsibility of mass-chains $A=31-44$ for ENSDF data evaluation, NSCL/MSU data center also takes on additional mass chain, selected from the evaluation priority list made by NNDC and coordinated within the NSDD network.

To date, mass chains $A=138, 40$ and 39 have been re-evaluated at NSCL/MSU since 2015, mass chain $A=38$ is currently under evaluation and the rest in $A=31-44$ region are up-to-date according to the 10-year update cycle.

For XUNDL compilations, a total of 186 datasets from 86 papers have been compiled since April 2015.

Table: Status of mass chain evaluations at NSCL/MSU

| Mass Chain | Year of last evaluation | Evaluator of last evaluation | Current status |
|------------|-------------------------|------------------------------|----------------|
| 31 | 2013 | C. Ouellet and B. Singh | Up-to-date |
| 32 | 2011 | C. Ouellet and B. Singh | Up-to-date |
| 33 | 2011 | J. Chen and B. Singh | Up-to-date |
| 34 | 2012 | N. Nica and B. Singh | Up-to-date |

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| 35 | 2011 | J. Chen, J. Cameron and B. Singh | Up-to-date |
| 36 | 2011 | N. Nica, J. Cameron and B. Singh | Up-to-date |
| 37 | 2012 | J. Cameron, J. Chen and B. Singh | Up-to-date |
| 38 | 2007 | J. Cameron and B. Singh | Under-evaluation |
| 39 | 2017 | J. Chen | in-review |
| 40 | 2015 | J. Chen | Up-to-date |
| 41 | 2015 | C. D. Nesaraja and E. A. McCutchan | Up-to-date |
| 42 | 2016 | J. Chen and B. Singh | Up-to-date |
| 43 | 2015 | B. Singh and J. Chen | Up-to-date |
| 44 | 2011 | J. Chen, B. Singh and J. Cameron | Up-to-date |
| 138 | 2016 | J. Chen | in-review |

3. Code development and maintenance

The NSCL/MSU data center takes the lead in the code development and maintenance of a Java program (McMaster-MSU-JAVA-NDS) for the production of publish-ready manuscripts of mass chain evaluations for the Nuclear Data Sheets. A modified version of this program is now also used to generate the PDF outputs of ENSDF datasets for web-display of the ENSDF database on NNDC website.

The NSCL/MSU data center is also responsible for the maintenance of the computer program xls2ens developed to assist the XUNDL compilation and which is being distributed through the USNDP and IAEA networks.