

A few words on EXFOR publications

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U.S. DEPARTMENT OF
ENERGY

Office of
Science

Need for a Big Paper???

- Do we have an urgent needs for an EXFOR big paper???
- Not really because we already have a ND2013 paper for the citation purposes. At the same time, ND2013 paper is a temporary solution that does not explain EXFOR to a nuclear physicist or engineer and it is, essentially, a carbon copy of the previous conference proceedings.
- So, there is a strong need for a professionally-written paper. We need a full size paper, not another manual or conference proceedings.
- It has to be produced with the high ethics standards, serve a reference and provide a guidance to nuclear reaction data compilation, dissemination and software developments.
- Recent examples from other communities???

Nuclear Astrophysics White Paper

- The present state and future developments in nuclear astrophysics.
- An alphabetical collaboration paper:
 - 43 authors, 35 institutions worldwide
 - 1 corresponding author, MSU
- We can produce an alphabetical EXFOR paper with a few corresponding authors to reflect large contributions (4 major areas?).
- Such approach is the best way to honor past, present and future contributions from many people and centers worldwide.
- EXFOR has a very rich history; many people have contributed in the past, presently contribute and would contribute in the future. We have to treat our contributors fairly. It is very difficult (almost impossible) to find a single person who has contributed the most to EXFOR. It always has been a team effort.

Progress in Particle and Nuclear Physics 94 (2017) 1–67

Contents lists available at ScienceDirect

Progress in Particle and Nuclear Physics

Journal homepage: www.elsevier.com/locate/ppnp

Review

White paper on nuclear astrophysics and low energy nuclear physics Part 1: Nuclear astrophysics

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<http://dx.doi.org/10.1016/j.ppnp.2016.12.003>
0146-6410/© 2016 Published by Elsevier B.V.

Feedback from Nuclear Physics

DNP 2017

Fall Meeting of the Division of Nuclear
Physics of the American Physical Society

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October 25–28, 2017

Pittsburgh Marriott “City Center”
112 Washington Place, Pittsburgh, PA

- APS DNP 2017 meeting in Pittsburgh, PA (The biggest nuclear physics conference).
- Presentation of the North American contribution to Experimental Nuclear Reaction Database (EXFOR).
- Collecting feedback from nuclear physics community on EXFOR compilation and dissemination needs.
- We always collect feedback from the CSEWG.

EXFOR Paper Prototype

- IAEA-NNDC EXFOR Web Interface paper is in progress.
- By the end of this year the Web paper will be completed.
- We can use this work as a starting point and concentrate on the database itself instead of a Web dissemination platform (present scope).
- Add feedback from nuclear physicists, DNP 2016 and CSEWG.
- Workload estimates in 2017 are affected by the ENDF/B-VIII library release.
- We can start working on a new EXFOR paper in January-March 2018.
- It agrees well with a Pavel's timeline.

The Exchange Format (EXFOR) Database and Web Retrieval System

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Abstract

The Exchange Format (EXFOR) or experimental nuclear reaction database together with its associated Web interface, is the primary source of easily accessible low- and intermediate-energy nuclear reaction physics data sets and associate bibliographical information for more than 22,000 experiments since the beginning of nuclear science. The monthly-updated EXFOR database provides essential support for nuclear data evaluation, application development and research activities. The principles of the database and Web application development and maintenance are described. Examples of the recent developments of data renormalization and uploads, inverse reaction calculations for nuclear science and technology applications are specifically included.

The complete EXFOR database is freely available at the websites of the International Atomic Energy Agency <http://www-nds.iaea.org/exfor>, the National Nuclear Data Center <http://www.nndc.bnl.gov/exfor> and the mirror sites in Brazil, China, India and Russian Federation.

Keywords: Nuclear reaction data, Nuclear databases, Web dissemination

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Preprint submitted to Nuclear Instruments and Methods in Physics Research Section A October 21, 2016

Conclusions & Outlook

- We can learn from the CSEWG collaboration big paper and nuclear astrophysics white paper collective efforts.
- Incorporate feedback from the DNP APS and CSEWG attendees.
- We can use the prototype Web paper as a starting point.
- We would follow high ethics standards when all significant contributors since 70s will be properly included.
- Multiple people (different centers) should provide contributions on specific products.
- It is realistic to start in January-March 2018 and finish it by the end of the year.
- Strong cooperation of NNDC with Pavel Oblozinsky can be a huge asset.

The IAEA Mission Statement

The International Atomic Energy Agency:

- is an independent intergovernmental, science and technology-based organization, in the United Nations family, that serves as the global focal point for nuclear cooperation;
- **assists** its Member States, in the context of social and economic goals, in planning for and using nuclear science and technology for various peaceful purposes, including the generation of electricity, and facilitates the transfer of such technology and knowledge in a sustainable manner to developing Member States;
- develops nuclear safety standards and, based on these standards, promotes the achievement and maintenance of high levels of safety in applications of nuclear energy, as well as the protection of human health and the environment against ionizing radiation;
- verifies through its inspection system that States comply with their commitments, under the Non-Proliferation Treaty and other non-proliferation agreements, to use nuclear material and facilities only for peaceful purposes.