



HOKKAIDO
UNIVERSITY

Activity Report

Apr. 23, 2013

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Nuclear Reaction Data Centre (JCPRG)

Hokkaido University

JAPAN

Hokkaido University Nuclear Reaction Data Centre (JCPRG)

- Main Objectives
 - Compilation of charged-particle and γ induced nuclear reaction data obtained in Japan
 - Evaluation of nuclear reaction data on light nuclei
 - Development of collaboration among Asian and International Nuclear Reaction Data Centres (NRDC)
 - Education for graduate school students



Hokkaido University Nuclear Reaction Data Centre (JCPRG)

- Member

Group	Member
JCPRG Staff	Aikawa, Makinaga (, Hirabayshi)
JCPRG Researcher	Kato, Fujimoto
JCPRG Steering Committee	Aikawa, Hirabayashi, Kimura et al.
JCPRG Advisory Board	Aoi, Fukahori, Ohnishi, Otsuka, Sakurai
MML Researcher	Ebata, Ithinkhorloo, Odsuren, Vidya
Nuclear Theory Group	Kimura, Horiuchi, Furutachi et al.
Hokkaido Nuclear Group	Chiba, Katayama, Masui, Noto, Okabe

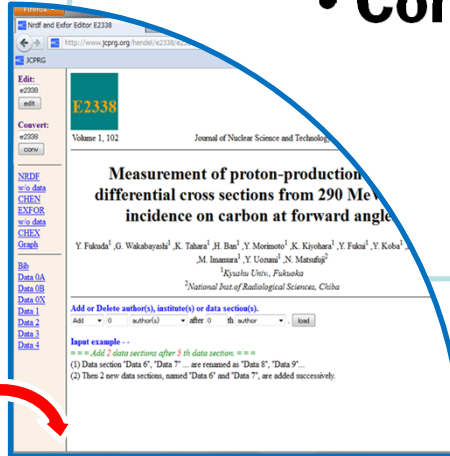


Interests in Nuclear Data

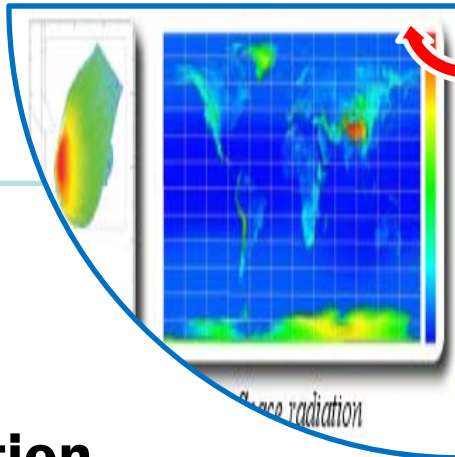
• Experiment



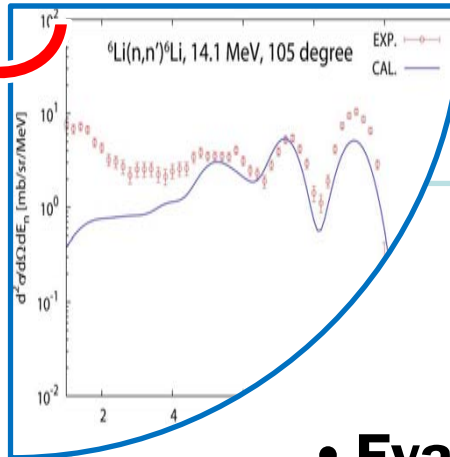
• Compilation



• Application

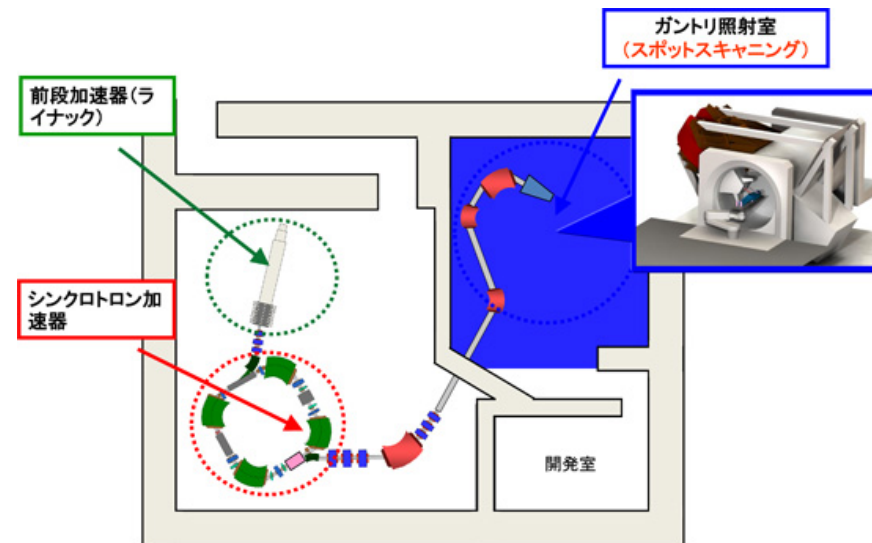


• Evaluation



Experiment

- Member
 - Makinaga, Aikawa
- Facility
 - 45 MeV electron LINAC
 - Proton synchrotron (under construction)



Compilation

- Member
 - [EXFOR] **Vidya**, Aikawa, Ebata, Ichinkhorloo, Makinaga, Odsuren
 - [NRDF] **Kato**, Aikawa, Chiba, Katayama, Noto
- Database
 - NRDF
 - EXFOR



Compilation: area E (Charged-particle)

- Total: 114 entries (33 new, 82 revised)

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
E068	Final (2012/5/23)	32	0	32
E069	Final (2012/6/15)	18	12	6
E070	Final (2012/8/25)	8	7	1
E071	Final (2012/10/10)	22	0	22
E072	Final (2013/1/10)	8	6	3
E073	Final (2013/3/1)	5	5	0
E074	Final (2013/4/15)	14	0	14
E075	Prelim. (2013/4/12)	7	3	4



Compilation: area K (Photonuclear)

- Total: 10 entries (6 new, 4 revised)

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
K011	Final (2012/5/29)	4	3	1
K012	Final (2012/12/12)	6	3	3



Compilation: area R (RIKEN compilation (~2000))

- Total: 3 entries (3 revised)

TRANS	TRANS Status	ENTRY Tot.	ENTRY New	ENTRY Rev.
R026	Final (2013/4/17)	3	0	3



Evaluation

- Member
 - Odsuren, Aikawa, Ebata, Ichinkhorloo, Kato, Kimura, Hirabayashi
- Method
 - CDCC
 - OCM, CSM
 - Cb-TDHFB



Application

- Member
 - **Ebata**, Aikawa, Fujimoto, Makinaga, Chiba, Katayama, Noto
- Field
 - Information Science: Webble World
 - Astrophysics: s-process
 - Simulation: PHITS



System development

- Data Retrieval System
 - 4 different scopes of retrieval systems
 - NRDF (<http://www.jcprg.org/nrdf/>)
 - NRDF/A (<http://www.jcprg.org/nrdfa/>)
 - EXFOR/ENDF (<http://www.jcprg.org/exfor/>)
 - CINDA (<http://www.jcprg.org/cinda/>): to be ceased
- Coding Software
 - Software for compilation
 - "HENDEL" editor
 - "GSYS" digitizer



Collaboration

- IAEA and NRDC
 - Compilation of charged-particle and γ induced nuclear reaction data
- Meme Media Laboratory
 - Software development
- RIKEN
 - Compilation of recent and old RIKEN data
 - Research of nuclear transformation
 - Research of astrophysical nuclear reaction data
- JAEA
 - Education for graduate school students
 - Evaluation of nuclear reaction data on light nuclei
 - Cooperation for NRDC



Asian Workshop



The 4th Asian Nuclear Reaction Database Development Workshop

*al-Farabi Kazakh National University, Almaty,
Kazakhstan, 23-25 October, 2013; E-mail: ca.nrdb@gmail.com*



TOPICS:

- Asian Nuclear Data Center Activity
- EXFOR Compilation
- Development of the Asian Nuclear Reaction Database Network
- Nuclear Reaction Experiments & Nuclear Reaction Evaluation
- Computational Simulation on Nuclear Reactions and Accelerator Facilities



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Summary

- JCPRG has interests in:
 - Experiment
 - Compilation
 - Evaluation
 - Application
- Nuclear Data activity is wide, continuous, long term efforts.
- Domestic and international collaborations are required.

