TUNL Contributions in the US Nuclear Data Program

Nuclear Data Evaluation Program

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Program on Preequilibrium Phenomenology

Constance Kalbach Walker

Nuclear Structure Evaluation
TUNL Nuclear Data Evaluation Project
Kelley, Tilley, Weller

- We are responsible for nuclear structure evaluation in the A=2-20 mass region
  - Energy Levels of Light Nuclei reviews published in Nuclear Physics A
  - ENSDF files for A=2-20
- Web interface for A=3-20 Information

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Recent Evaluation Activities

- *Energy Levels of Light Nuclei:A=8-10* is accepted for publication in Nuclear Physics A
  - collaboration with D.J. Millener

- Other work in progress:
  - Evaluation of A=3 for publication in NPA
  - Evaluation of A=11(then 12) for "Energy Levels"
  - prepare A=8-10 ENSDF files

TUNL Nuclear Data Evaluation Project

Triangle Universities Nuclear Laboratory — Duke, UNC, TUNL, NCSU

Energy Levels of Light Nuclei, A = 3 - 20

Nuclear Data Evaluation Project

TUNL Nuclear Data Evaluation

Information on mass chains and nuclides available on this website:

3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20

Group Info
Publications
HTML
General Tables
Update Lists
Level Diagrams
Tables of EL's
ENSDF
Palm Pilot
Table of Isotopes
Useful Links
Citation Examples

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Search:

• TUNL Nuclear Data Group: Who we are and what we do.

Our publications on Energy Levels of Light Nuclei, A = 5 - 20:

• Publications: TUNL evaluations of A = 3 - 10 and A = 16 - 20, and modified versions of Fay Ajzenberg-Selove's publications of A = 5 - 20, are available here in PDF format. Some reprints and preprints may be requested by mail.

• HTML for Nuclides: HTML documents are available for individual nuclides found within the TUNL or FAS evaluations.

Resources relating to our publications:

• General Tables: General Tables in HTML for A = 5 - 10 nuclei.

• Update Lists contain important papers published since the most recent evaluation of each nucleus and are available for A = 3 - 16 nuclei.

• Energy Level Diagrams are available for A = 4 - 20 nuclides.

• Tables of Energy Levels: a brief listing of tables of energy levels from the most recent publication for each nuclide A = 4 - 20.

• SiteMap and Complete List of Available TUNL Documents: Trying to find a specific TUNL evaluation or preliminary report, HTML document, General Table, Update List or Energy Level Diagram? Click here for a complete list of what's available on our website.

Applications and databases relating to the A = 3 - 20 nuclides:

• ENSDF information for A = 2 - 20 nuclides available through the National Nuclear Data Center (NNDC) site.

• Palm Pilot Physics Page: Links to Palm applications and databases that are of interest to the Nuclear Physics community.

• Table of Isotopes v. 1.0 (1996): This short version contains only information on A = 1 - 20 isotopes.

Helpful links:

• Links Important links to the National Nuclear Data Center, online nuclear physics journals, and other useful sites.

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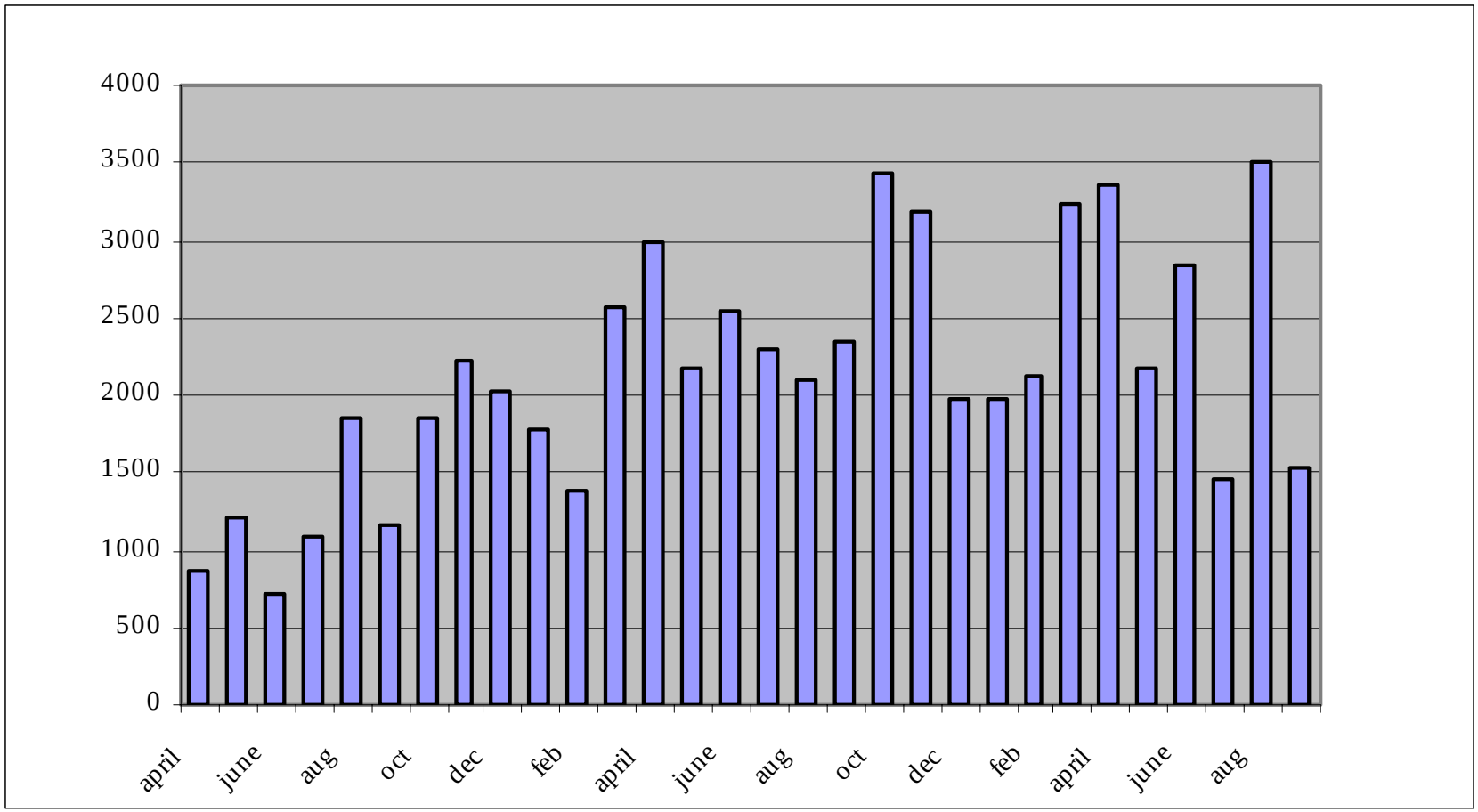
WWW usage (Oct 03-Sept 04)



PREEQUILIBRIUM MODELS / CODE

- PROGRAM: Exciton & related models expressed in code PRECO
  - Describe continuum reactions
  - Nucleon and complex particle channels
  - E_{inc} = 14 to 100 MeV
- RECENT & CURRENT WORK
  - Direct reactions with complex particles (in progress for 5 years!)

PREEQUILIBRIUM MODELS / CODE

- FUTURE WORK
  - Add breakup components (d and ^{3}He)
  - Improve state densities
  - New release of code PRECO
- LONGER TERM WORK
  - Benchmark exciton model to higher E_{inc}
  - Revise angular distribution systematics