ADAMANT:
database for atomic data users and producers

Romas Kisielius

Institute of Theoretical Physics and Astronomy
Vilnius University
Lithuania

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a database for atomic data users and producers

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Institute of Theoretical Physics and Astronomy,
Vilnius University, Lithuania

ADAS Workshop 2013
September 1 – 3

Outlook

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ADAMANT

- Applicable
- DAta
- of Many-electron
- Atom
- eNergies
- and Transitions

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Outlook

Main purpose

- open-access database
- theoretical high-precision data
- data accuracy assessment
- applicable in plasma modeling

Outlook

Developers

Institute of Theoretical Physics & Astronomy, VU

- Data producers:
  - Pavel Bogdanovich
  - Alicija Kupliauskienė
  - Romas Kisielius
- Database development: Š. Mikolaitis
- Support team:
  - G. Merkelis
  - G. Valiauga
  - E. Stonkutė

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Atomic Data

- constantly updated and extended
- website for information and guide
- methods described and accuracy assessment
- data formats
- user comments and requests

Outlook

Data Types

A. Spectroscopic parameters

- energy levels, level compositions
- level lifetimes
- radiative transition wavelengths
- transition probabilities, oscillator strengths, line strengths

B. Electron-ion interaction parameters

- electron-impact excitation cross sections, collision strengths, rates
- electron-impact ionization cross sections, collision strengths, rates
- dielectronic recombination rates
- level autoionization probabilities

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Data Formats

- HTML
- ASCII (machine readable)
- producer information
- method description
- assessed accuracy
- different files for different data types
- files are inter-connected

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Producer-User Interaction

- GUI for selection
- answers to FAQ
- comments on data accuracy
- requests for new data production
- (probably) DB Guide

Important Features

- same computer code suites
- same approximation for CI and relativistic effects
- identical multireference wavefunction basis
- reduced workload for data application
- simple data parsing for modeling codes

Some shortcomings:

- untested in modeling codes
- still “under development”

You are WELCOME to join ranks of USERS or PRODUCERS!

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