OPEN-ADAS pre-release report

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Contents

- Background (repeat of last year).
- Data classes covered by OPEN-ADAS.
- Last years to-to list.
- Web interface.
- Final steps.
- Conclusions.

Background

- OPEN-ADAS is a joint development between the IAEA and the ADAS Project.
- Main goals are:
  - to index the data contained within the ADAS database,
  - to provide a searching system for these data,
  - to re-work the documentation and data status,
  - to provide access to the data freely via the web.
- With the exception of the last point, all of the above have benefit to ADAS Project members

Scope of OPEN-ADAS

- OPEN-ADAS is limited to a selection of key data classes:
  - key diagnostic data classes for fusion are targeted,
  - opacity (and related data) already available,
  - no point in releasing driver files.
- OPEN-ADAS will not release any of the ADAS code, only data,
  - exception is code necessary for reading the data.
- New developments with flexible partitioning will not be included:
  - still in development,
  - need to be tuned to transport characteristics etc.,
  - best used with close support from ADAS personnel.

OPEN-ADAS data classes

Class	Description	Files	Size
ADF01	Charge exchange Cross sections	118	3.0 MB
ADF04	Resolved specific ion data collections	1078	404 MB
ADF07	Electron impact ionisation coefficients	67	1.8 MB
ADF08	Radiative recombination coefficients	100	2.6 MB
ADF09	Dielectronic recombination coefficients	1531	1.0 GB
ADF11	Iso-nuclear master files	343	50 MB
ADF12	Charge exchange emission coefficients	45	2.0 MB
ADF13	Ionisation per photon coefficients	153	38 MB
ADF15	Photon emissivity coefficients	173	77 MB
ADF21	Effective beam stopping coefficients	218	4.4 MB
ADF22	Effective beam emission coefficients	402	7.6 MB
	Total	4228	1.58 GB

Web Interface

- Web interface written in PHP and outputs XHTML.
- Allows interactive searching of the database via a number of routes:
  - searching by data class,
  - cross-data class searching by ion,
  - cross-data searching by wavelength,
  - general free-form search*.
- Gives information on contents of each data file.
- Option to download the file, reading routines or documentation.

$\star$ — Awaiting implementation.

Some pictures...

OPEN-ADAS: Search ADF15 Files - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

ADAS

Atomic Data and Analysis Structure

OPEN-ADAS Version 0.1B

Help | My Account | Log Out

- Freeform search
- Search by wavelength
- Search by ion
- Search by data class
- Documentation
- Download codes
- About ADAS

ADF01 | ADF04 | ADF07 | ADF08 | ADF09 | ADF11 | ADF12 | ADF13 | ADF15 | ADF21 | ADF22

Search ADF15 Files

Wavelength

Minimum (Å): 3000

Maximum (Å): 4000

Ion

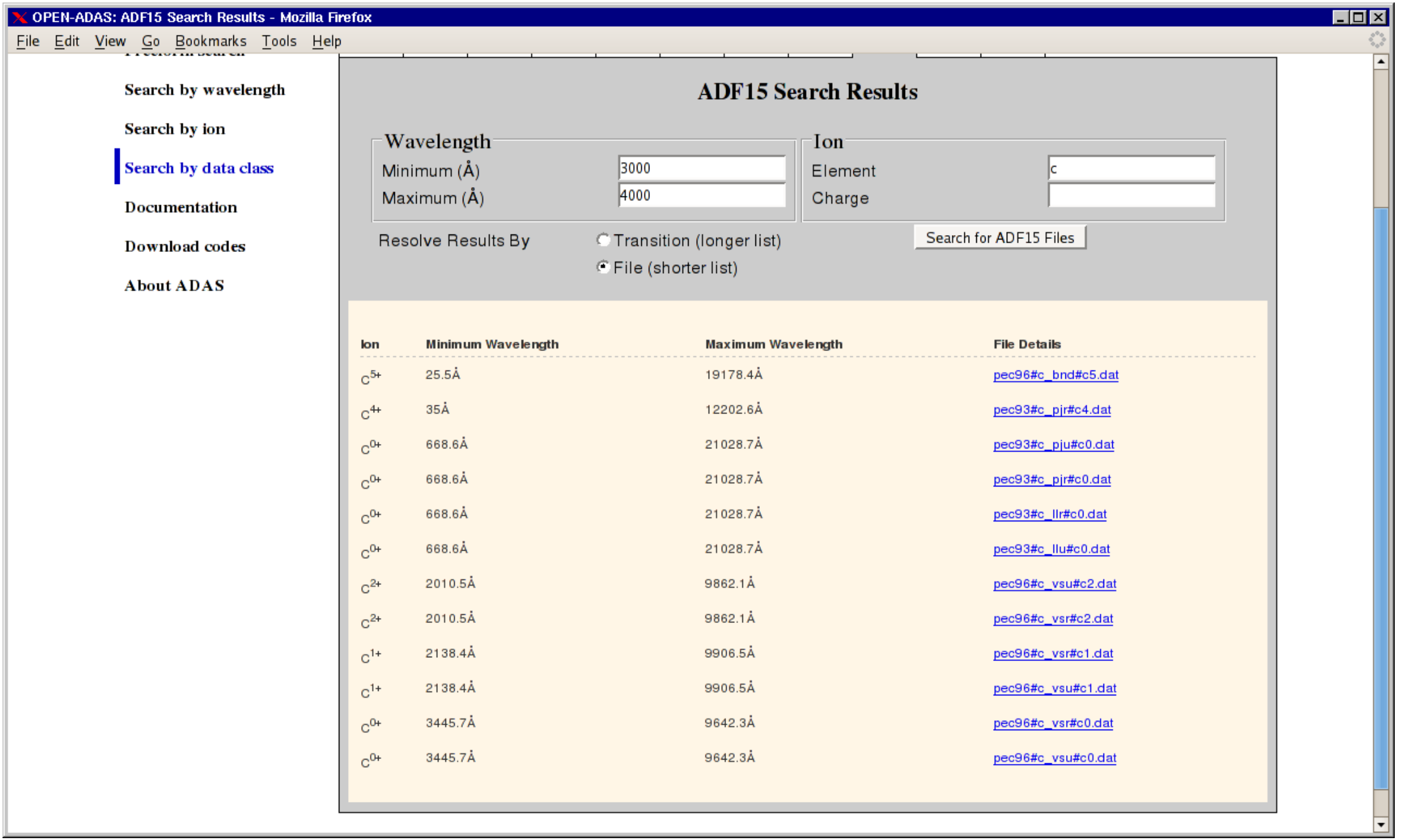
Element: c

Charge:

Resolve Results By: ○ Transition (longer list) ◉ File (shorter list)

Search for ADF15 Files

Comments and questions to: adas@phys.strath.ac.uk


OPEN-ADAS: ADF15 Search Results - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
Search by wavelength
Search by ion
Search by data class
Documentation
Download codes
About ADAS
ADF15 Search Results
Wavelength
Minimum (Å) 3000
Maximum (Å) 4000
Ion
Element c
Charge
Resolve Results By
Transition (longer list)
File (shorter list)
Search for ADF15 Files
Ion
Minimum Wavelength
Maximum Wavelength
File Details
C5+ 25.5Å 19178.4Å pec96#c_bnd#c5.dat
C4+ 35Å 12202.6Å pec93#c_pjr#c4.dat
C0+ 668.6Å 21028.7Å pec93#c_pju#c0.dat
C0+ 668.6Å 21028.7Å pec93#c_pjr#c0.dat
C0+ 668.6Å 21028.7Å pec93#c_llr#c0.dat
C0+ 668.6Å 21028.7Å pec93#c_llu#c0.dat
C2+ 2010.5Å 9862.1Å pec96#c_vsu#c2.dat
C2+ 2010.5Å 9862.1Å pec96#c_vsr#c2.dat
C1+ 2138.4Å 9906.5Å pec96#c_vsr#c1.dat
C1+ 2138.4Å 9906.5Å pec96#c_vsu#c1.dat
C0+ 3445.7Å 9642.3Å pec96#c_vsr#c0.dat
C0+ 3445.7Å 9642.3Å pec96#c_vsu#c0.dat

Freeform search

Search by wavelength

Search by ion

Search by data class

Documentation

Download codes

About ADAS

ADF01 | ADF04 | ADF07 | ADF08 | ADF09 | ADF11 | ADF12 | ADF13 | ADF15 | ADF21 | ADF22

ADF15 File: pec96#c_vsr#c1.dat

Ion: C^{1+}

Temperature Range: 0.172 → 1030 eV

Density Range 1280 → 1.28e+17 cm^{-3}

Filename: pec96#c_vsr#c1.dat

Full Path: adf15/pec96#c/pec96#c_vsr#c1.dat

Download Options

Download Data

Documentation

Software libraries

Show origin information

Wavelength	Transition	Type	Driving Population
2138.4Å	2S2 5D1 $^2D_{4.5}$ → 2S2 3P1 $^2P_{2.5}$	Excitation	2S2 2P1 $^2P_{2.5}$
2138.4Å	2S2 5D1 $^2D_{4.5}$ → 2S2 3P1 $^2P_{2.5}$	Excitation	2S1 2P2 $^4P_{5.5}$
2138.4Å	2S2 5D1 $^2D_{4.5}$ → 2S2 3P1 $^2P_{2.5}$	Recombination	
2138.4Å	2S2 5D1 $^2D_{4.5}$ → 2S2 3P1 $^2P_{2.5}$	Recombination	
2138.4Å	2S2 5D1 $^2D_{4.5}$ → 2S2 3P1 $^2P_{2.5}$	Charge Exchange	
2138.4Å	2S2 5D1 $^2D_{4.5}$ → 2S2 3P1 $^2P_{2.5}$	Charge Exchange	
2174.6Å	2S2 4P1 $^2P_{2.5}$ → 2S2 3S1 $^2S_{0.5}$	Excitation	2S2 2P1 $^2P_{2.5}$
2174.6Å	2S2 4P1 $^2P_{2.5}$ → 2S2 3S1 $^2S_{0.5}$	Excitation	2S1 2P2 $^4P_{5.5}$
2174.6Å	2S2 4P1 $^2P_{2.5}$ → 2S2 3S1 $^2S_{0.5}$	Recombination	
2174.6Å	2S2 4P1 ^2P → 2S2 3S1 ^2S	Recombination	

Last years 'next steps'

- ~~Documentation of code — almost none so far.~~
- ~~Expansion to remaining~~ data formats.
- ~~Search by wavelength~~ and freeform search.
- ~~Review of the design aspects~~ of the web interface.
- ~~Preparation of software libraries~~, including ~~documentation~~.
- Setting up a live site and ~~specific deployment considerations.~~

Conclusions and final steps

- Expansion to remaining data formats.
- Freeform search.
- Some feedback from IAEA with requests for small changes.
- Extensive testing:
  - some volunteers from last year (Brix, Lanzafame, Zastrow),
  - also need non-ADAS users.
- Preparation of software libraries, including documentation.
- Setting up a live site and specific deployment considerations.