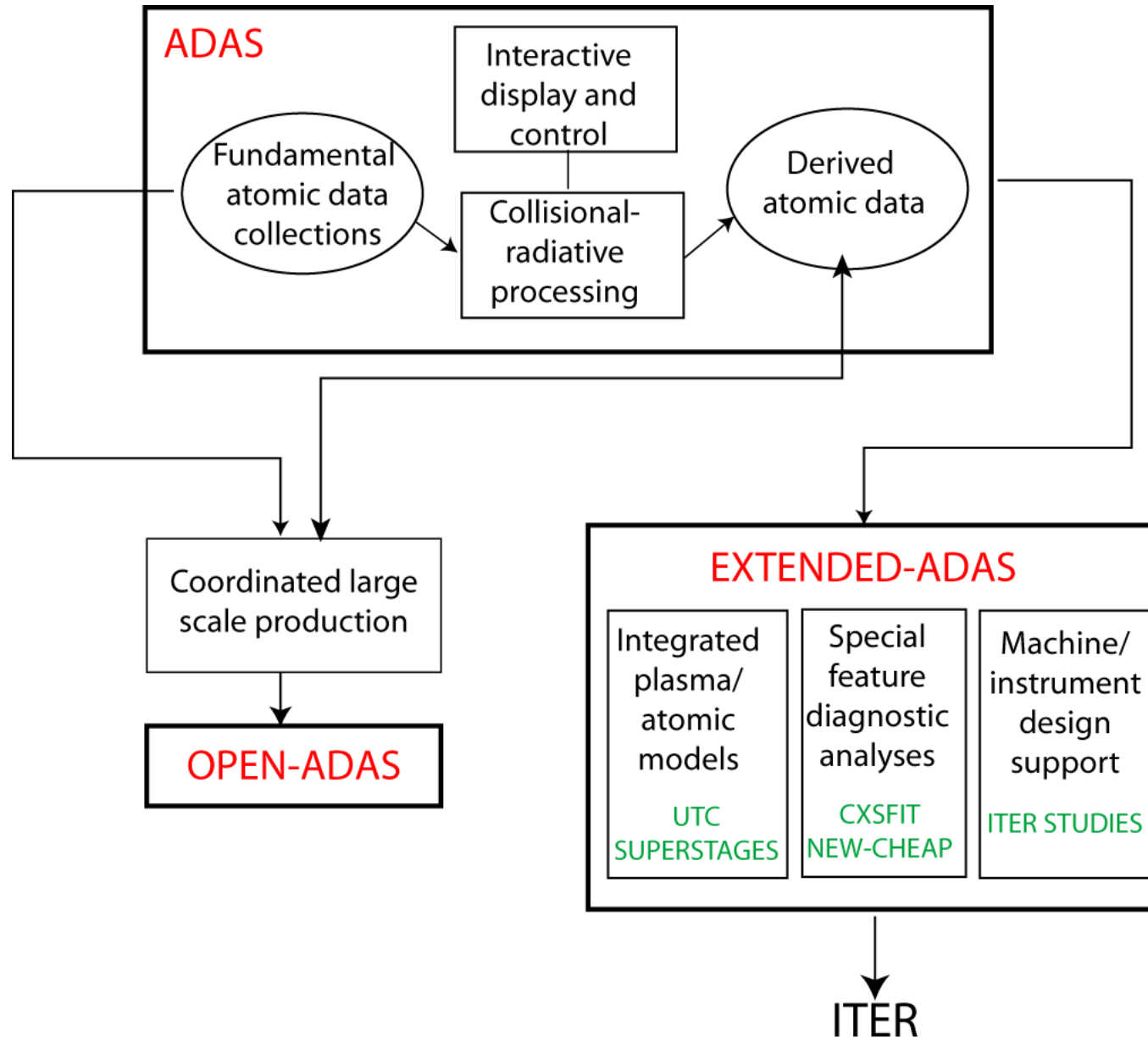**University of Strathclyde**

Glasgow

Review of developments and future plans

Martin O'Mullane, H P Summers and A D Whiteford

Department of Physics

University of Strathclyde

Current ADAS organisation

Offline ADAS

A set of codes designed to run non-interactively:

- ▶ ADAS7#1: Collection of scripts for AUTOSTRUCTURE DR, RR, PI and PE calculations.
- ▶ ADAS8#1: Automation of Cowan code for iso-nuclear calculations
- ▶ ADAS8#2: Iso-nuclear automation of collisional–radiative model
- ▶ ADAS8#3: Automation of R-matrix calculations.

Generally run from scripts:

- ▶ Usually requires expert tuning for specific machine architectures and compilers so is not distributed as standard with ADAS.
- ▶ Do not make use of IDL (core language is Perl driving Fortran codes).

Should these be distributed as a matter of course?

Extended-ADAS

► Very much tied to specific experimental analysis rather than applied atomic physics in the more general sense.

► Maintained and co-developed by the ADAS Project but not considered part of the core interactive ADAS series of programs.

CXFIT and UTC have proved to be successful and useful.
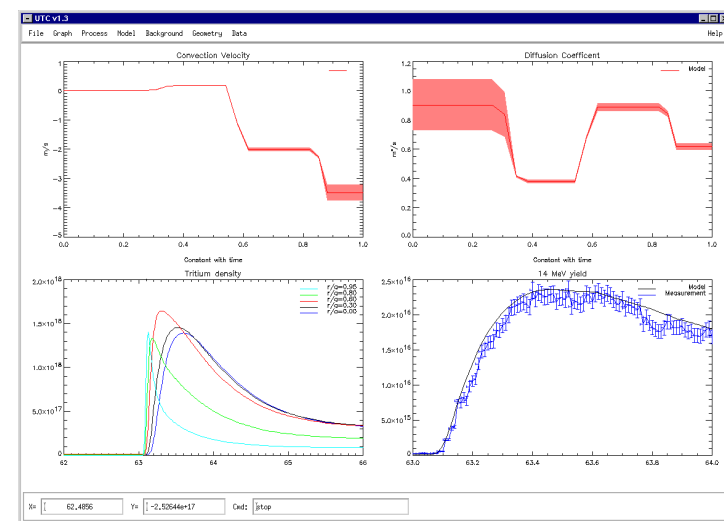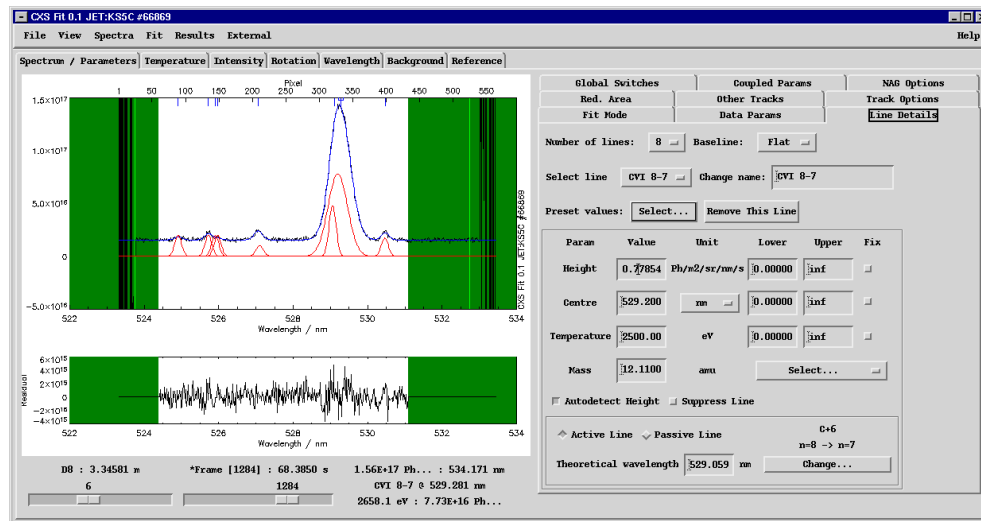
► The next code to pass the *local atomic boundary* is CHEAP.

► Again this will be a multi-laboratory collaboration.

New codes in next release — ADAS315, ADAS316, ADAS416

The impact of heavier species on charge exchange spectroscopy is of interest to current machines and for ITER diagnostic evaluation.
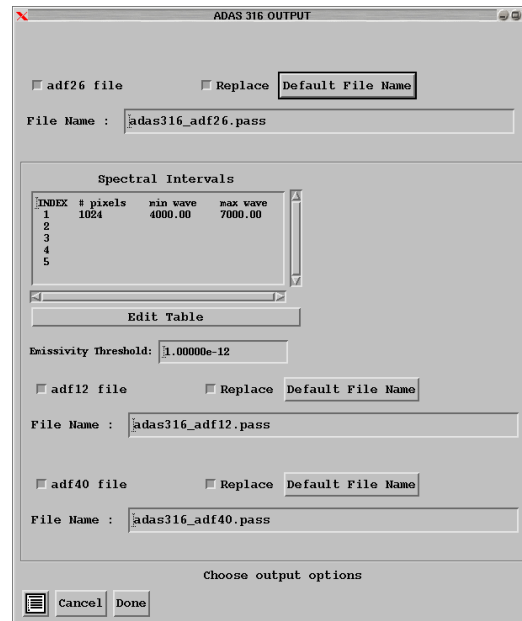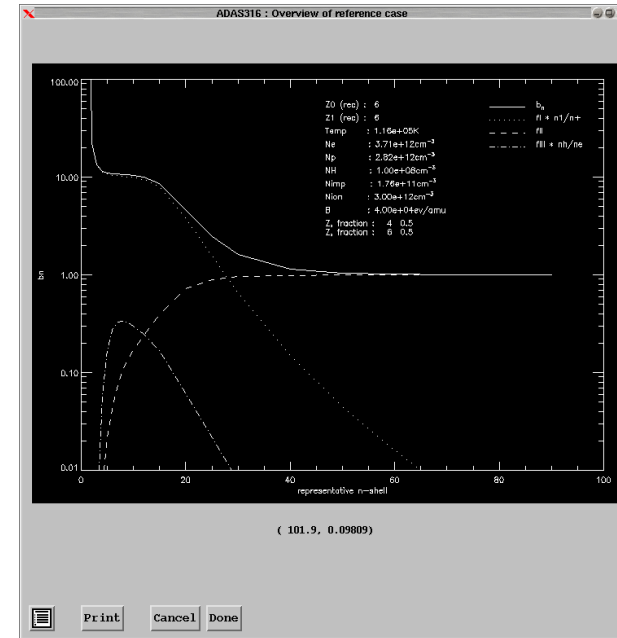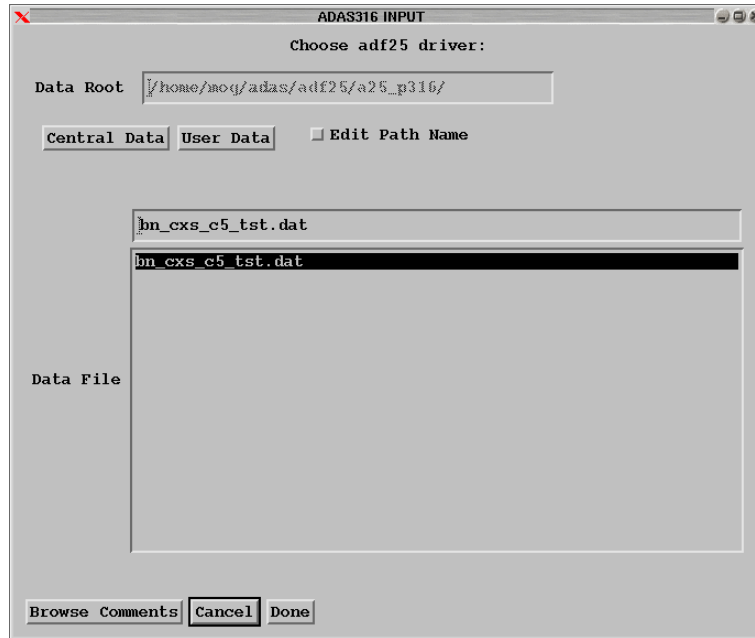
ADAS315 — extract adf01 data from universal scaled CX data:
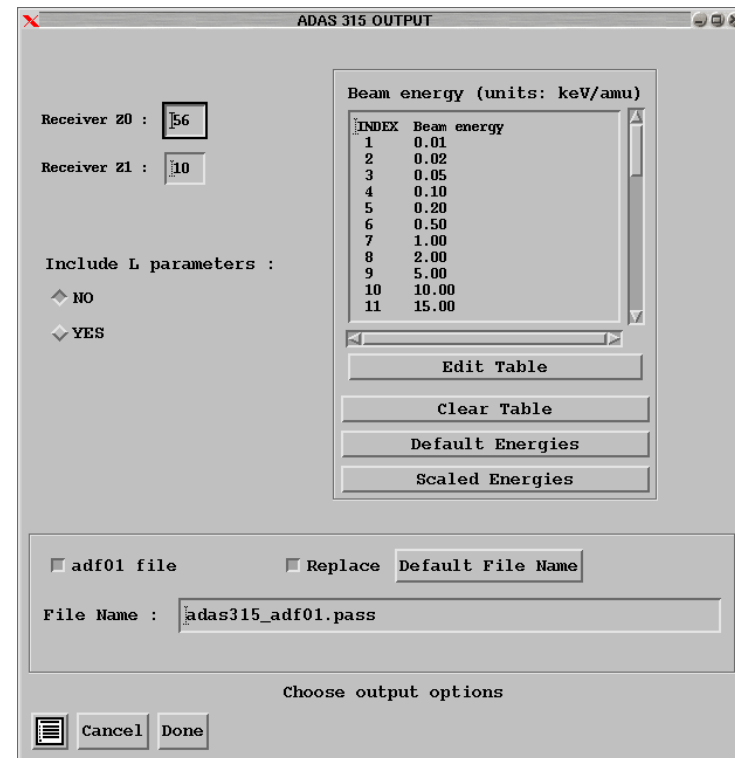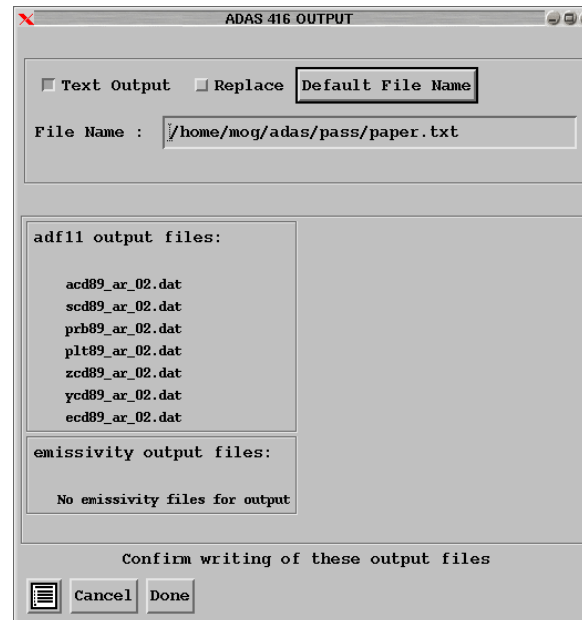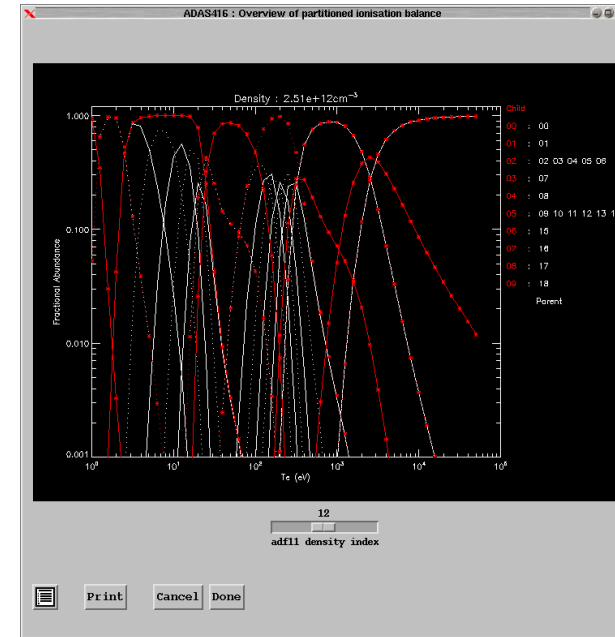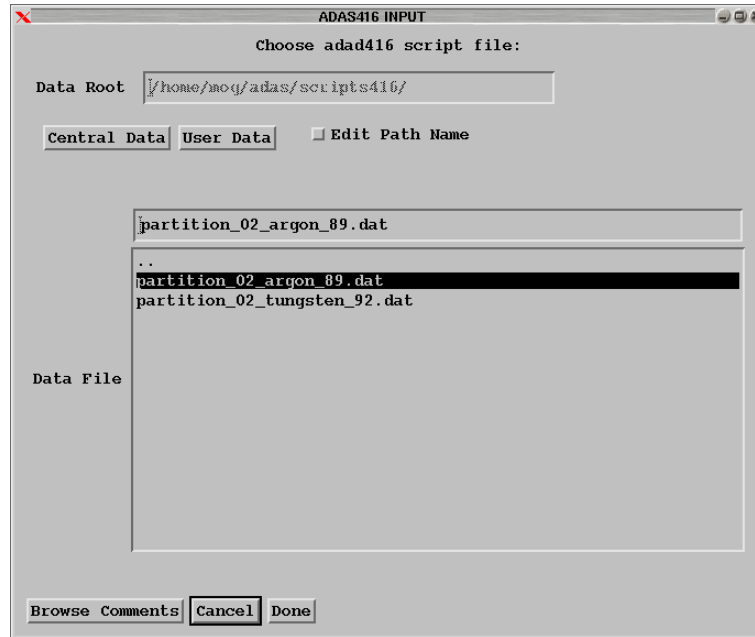

Adam Foster

Based on *run_adas315.pro*

ADAS316 — bundle-n CX emissivity generation

Based on *run_adas316.pro*

ADAS416 — Repartition adf11 and emissivity datasets

Based on *run_adas416.pro*

Callable ADAS: A simple example

Why all the 'Based on *run_adasXXX.pro* footnotes? Consider,

```
te   = adas_vector(low=1, high=1000, num=127)
dens = findgen(127) + 1e13
```
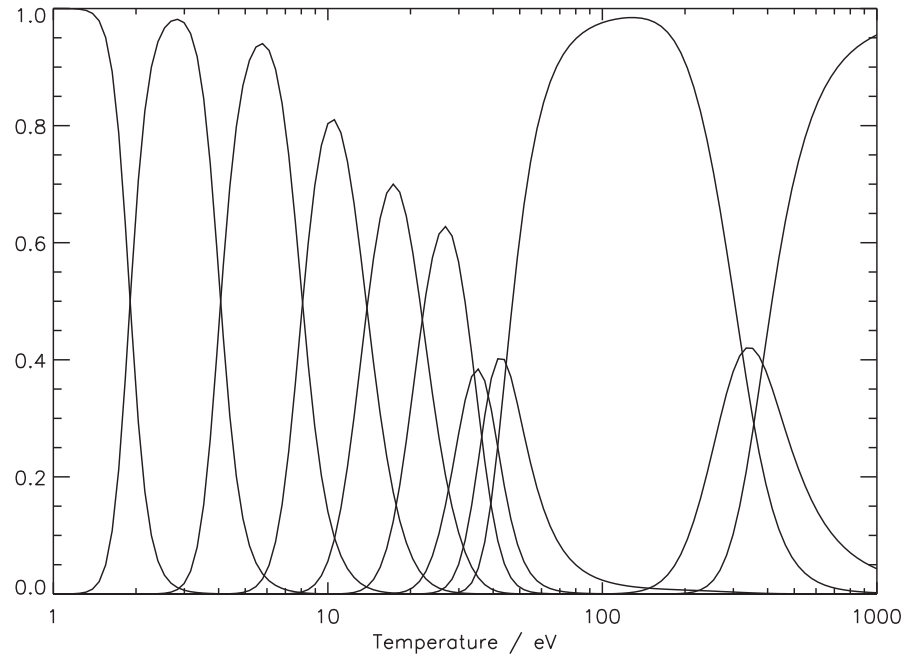


```
run_adas405,uid  = 'adas', $
            year = '96',   $
            elem = 'ne',   $
            te   = te,     $
            dens = dens,   $
            frac = frac
```

```
plot_oi, te, frac.ion[*,0], xtitle = 'Temperature / eV'

for i = 1, 10 do oplot, te, frac.ion[*,i]
```

Bugs!!!

To preempt the general discussion a little.

- ▶ We realise that some bugs take forever to be squashed.

- ▶ To date the reporting and filing of bugs was chaotic (at best!).

- ▶ We will introduce a bug tracking system so that we will at least know about the problems.

- ▶ Please continue to communicate/email (even the most trivial) of bugs to us: `bugs@adas.phys.strath.ac.uk`.