



# Future plans and developments

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# A series of questions to consider

## Physics improvements:

- ▶ Move to intermediate coupling population models.
- ▶ Extension to high  $Z$  for charge exchange emission.
- ▶ Fine structure manifold models.
- ▶ Deploy non-Maxwell distribution.

## Possible new areas:

- ▶ Molecules!
- ▶ photo-ionisation/excitation/recombination etc. (Nigel et al)
- ▶ Dense plasmas.
- ▶ Non fully ionised plasmas.

## Atomic physics/plasma behaviour interpretation:

- ▶ CXSFIT
- ▶ UTC
- ▶ CHEAP
- ▶ Spectral feature synthesis (Chris PhD topic)
- ▶ Should we consider others — in the astrophysical domain?

# Questions on organisation

## Database side of ADAS:

- ▶ Open-ADAS
- ▶ Methods/procedures for keeping up-to-date.
- ▶ Is the year number system adequate?
- ▶ Extensibility of adf formats.
- ▶ What should be on the website?

## Geographical issues:

- ▶ Is JET still a major cross-road for fusion (primarily EU but US and RF also)?
- ▶ Will there be a migration to ITER?
- ▶ How can we improve links to astrophysical world?

## More nebulous issues:

- ▶ Who is going to do all the work?
- ▶ How is ADAS perceived?
- ▶ How to keep rooted in experiment/diagnostic verification?
- ▶ Is there a mechanism for funding specific data needs?

# Challenges ahead

## Challenges on data

- ▶ Full baseline coverage for all elements.
- ▶ Error bars on all derived adf11/adf13/adf15/adf12/adf21/adf22.
- ▶ Ion-atom baseline data collection.
- ▶ Improve automation of fundamental and derived data production and scrutiny.

## Challenges on computation

- ▶ Changing computational landscape.
- ▶ Are we too dependent on platforms or is specifying one a good idea?
- ▶ Driven by user request.

ADAS growth has been steady and incremental.

Do we need a grand challenge?