ADAS-EU COURSE 2009

Course Title:	ADAS and Atomic Calculations for Fusion and Astrophysical Applications
Scheduling:	8 Oct. '09 – 16 Oct. '09
Lectures:	Introductory one-hour lecture Thu 9 at 10.00; seven 1.5 hour lectures Thu 8 - Fri 16 at 13.30 (normally in two 1/2 hour parts with 1/4 hour of illustrations for each part)
Discussions:	11.00-12.00 Thu 8-Fri 9 – participant problem definition and assessment
	15.00-17.00 Fri 16 – review
Unix sessions:	15.00-17.00 Thu 8-Tue 14 – example classes
	15.00-17.00 Wed 14-Thu 14 – participant problem solving –shared
	09.00-11.00 Fri 9 – participant personal research/ADAS time
	09.00-12.00 Mon 12 – Fri 16 – participant personal research/ADAS time

This is an intensive, restricted entry, tailored course for those requiring comprehensive and detailed knowledge of the ADAS Atomic Data and Analysis Structure and atomic calculations associated with it. Participants after completion of the course will be expected to be able to originate applications for the laboratory fusion plasma and astrophysical plasma regimes, which require ADAS data and modelling inputs. Also, they will be expected to be able to initiate basic atomic structure and collision calculations designed to provide the fundamental data inputs to ADAS needed for their applications. It is intended that course participants will be able to act in an advisory capacity on ADAS at their home laboratories.

The course is divided into two parts. Part 1, led by Prof. H. P. Summers, Dr. A. Whiteford and Dr. M.G. O'Mullane and is focused on ADAS itself. It will comprise 5 lectures in total, the first two concerned with working with the whole of ADAS at a basic level and the second three with advanced modelling and efficient ADAS utilisation aspects.

Part 2 is led by Prof. H. P. Summers , Dr. A. Whiteford, Dr. M.G. O'Mullane, Dr. Dmitri Borodin† and Prof. N. R. Badnell# It will focus on complex atom issues for fusion, high quality electron collision cross-sections and selected application code illustrations from charge exchange spectroscopy and plasma impurity transport modelling. This part may be adjusted according to participant special interests and requests.

The lectures for both parts of the course will have associated hands-on computer example classes exploring the lecture content. It is expected that participants who attend the course will have identified a problem (project) of importance to their personal research which requires ADAS capabilities and which they will wish to work on during the course. Time is allocated to whole class assessment and evaluation of each participant's project. Additionally a person with ADAS experience suited to each participant's project will be assigned to help in shared development of that project.

Lectures	1. Introduction – ADAS, IDL, and local setup	HPS/MOM
	2. ADAS tutorial – the interactive system	HPS/MOM
	3. ADAS tutorial – efficient access and use of data and codes.	MOM/ADW
	4. ADAS tutorial – Coll.-rad. modelling for models and spectroscopy	MOM/HPS
	5. ADAS tutorial – CX and beam emission spectroscopy	HPS/ADW
	6. Complex atom modelling	HPS/MOM
	7. Extended ADAS, ERO, CXSFIT	DB/ADW
	8. Electron impact collision calculations	NRB/ADW

† Attending 14-15 Oct.
# Attending 15-16 Oct.

HPS/9 Sep '09