Abstract for ICAMDATA05, Meudon, France
October 15–19, 2006

ADAS: Atomic data, modelling and analysis for fusion

H. P. Summers,[1] M. G. O'Mullane,[1] A. D. Whiteford,[1]

[1] *Department of Physics, University of Strathclyde, Glasgow, UK*

summers@phys.strath.ac.uk

Domain : Fusion, Spectroscopic diagnostics

The Atomic Data and Analysis Structure, ADAS, comprises extensive fundamental and derived atomic data collections, interactive codes for manipulation and generation of collisional-radiative data and models, off-line codes for large scale fundamental atomic data production and codes for diagnostic analysis in the fusion and astrophysical environments. ADAS data are organized according to precise specifications, tuned to application and are assigned to numbered ADAS data formats. Some of these formats contain very large quantities of data and/or have achieved fairly wide-scale adoption in the fusion community.

The talk will focus on recent extensions of ADAS designed to orient ADAS to the needs of ITER. The issue of heavy atomic species, expected to be present as ITER wall materials, dopants or control species, will be addressed with a view to the economized handling of the emission and ionization state data needed for diagnostic spectral analysis. Charge exchange and beam emission spectroscopic capabilities and developments in ADAS will be reviewed from an ITER perspective and in the context of a shared analysis between fusion laboratories. Finally an overview and summary of current large scale fundamental data production in the framework of the ADAS project will be given and its intended availability in both fusion and astrophysics noted.