INAF/Osservatorio Astronomico di Cagliari

Contact person : G. Mulas

OAC is of the Research Structures of the Istituto Nazionale di Astrofisica (INAF). A variety of

astronomical and technological research activities are pursued at OAC. It homes one of the world-leading groups of pulsar research, an extragalactic radioastronomy group, an astrochemistry group. It has been involved in several instrumental projects, such as the TNG Italian optical telescope at the Canary Islands, the FLAMES instrument now operating at UT2 of the ESO VLT. It is now involved in building the new 64m Sardinia Radio Telescope (http://www.srt.inaf.it), and two HPC clusters which will be nodes of the upcoming distributed supercomputing facility Cybersar (http://www.cybersar.com).

The astrochemistry group at INAF-OAC studies the photophysics of large molecules in space through a combined theoretical/modelling + multi-wavelength observational approach. In collaboration with Dr C. Joblin at CESR Toulouse, in 2003 the astrochemistry group started to build a database of the computed spectral properties of a large number of polycyclic aromatic hydrocarbons, currently available at http://astrochemistry.ca.astro.it/database . This group is recognised as one of the international leaders in the field of interstellar PAHs.

Role in VAMDC project : of database structure for large molecules, related XML schemes, connected specifications (in WP7); creation of automated tools to facilitate the ingestion of current and future data of our PAHs database in VAMDC, enabling (almost) automatic update and synchronisation and foreseeing the inclusion of PAH data from other sources, such as NASA Ames (in WP8); actual deployment of our PAHs database as a VAMDC node (in WP4); maintenance and monitoring of our VAMDC node (in WP5).

Key persons :

G. Mulas,staff astronomer

Expertise : astronomical and theoretical spectroscopy, headed the development of the data reduction software for the FLAMES–UVES, molecular modelling in astronomical environments, quantum chemistry, supercomputing.

Role in VAMDC project : SA1, SA2, JRA2, JRA3

G. Malloci, post-doc fellow

Expertise: molecular modelling in astronomical environments, quantum chemistry, supercomputing, PAH spectral database.

Role in VAMDC project : SA1, SA2, JRA2, JRA3

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