Andrea Orlati

Curriculum Vitae

Name: Andrea Orlati
Date of Birth: 11 March 1974
Position: INAF Technology researcher
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Andrea Orlati has been working, since March 2010, as a permanent member of the technology research staff of the National Institute for AstroPhysics (INAF) – Institute of RadioAstronomy (IRA).

Previous stages of his education and training include:

- Graduation in computer engineering, achieved in July 2000 at the University of Bologna (Italy);
- Three-year fellowship at the National Research Council (CNR), aimed at the optimization of the VLBI activities at the Medicina radio telescope for the EVN consortium;
- Six years as INAF fixed-term technology researcher, for the design and development of the Sardinia Radio Telescope (SRT);
- Author of an invited talk: "Antenna gain calibration" at the IVS Technical Operation Workshop (TOW), at the Haystack Observatory, May 2005;
- Supervisor of many students for their graduation thesis;
- Attended courses:
  - "Linux cluster laboratory" (CINECA),
  - "Message-Passing programming" (CINECA),
  - "Labview, Advanced Course" (National Instruments, inc.);
- Certifications:
  - December 2003, *Red Hat Certified Technician* (RHCT) (Red Had, inc.),
  - September 2005, *Red Hat Certified Engineer* (RHCE) (Red Had, inc.),
  - September 2014, *VmWare certified professional*: data centre virtualisation (VmWare, inc.)

Andrea Orlati was the *VLBI friend*, in charge of the VLBI activities, at the Medicina radio telescopes since 2017. He is also member of the EVN-TOG (Technical and Operation Group).

In the framework of the SRT project, he leads the group in charge of the development of the telescope control software. During the commissioning phase he took care of

tasks such as: sub-system integration, first light measurements and telescope calibration.

In December 2013 he joined the Observation Management group inside the Telescope Manager consortium of the SKA project (SKA.TM.OBSMGT).

Since March 2017 is the in charge Head of operation at the Sardinia Radio Telescope.

The above-mentioned experiences are related to different know-how areas, which can be shortly outlined as follows:

(1) Scientific data handling

Single-dish data acquisition, analysis techniques (e.g. DFT e KLT transforms), tools for data reduction and calibration, production of output files in "standard" formats (e.g. FITS, MBFITS).

(2) Gain calibration of the antenna/receiver system

The characterisation of both the antenna gain and the noise diode at the various observing frequencies is a top priority for the acquisition of reliable data. This applies to both single-dish and interferometry observations. Andrea Orlati has been, for several years, a maintainer for the gain calibration software employed in the VLBI activities, in cooperation with the NASA Goddard Space Flight Center staff.

(3) Control software for radio telescopes

Control software for the many devices composing the large instruments exploited in radioastronomy: servo systems, receivers, back-ends. Tools for automation, calibration, astrometry and tracking. Tools for the preparation and scheduling of both single-dish and interferometric observations.

(4) Preparation and configuration of VLBI sessions

Knowledge of the technical aspects behind interferometric observations. Such experiments require to control the whole system – from receiver to back-end, from telescope pointing to data recording – adhering to precise standards.

(5) Linux Clusters

PC-clustering approach to HPC (High Performance Computing), oriented to scientific data handling. Management of safety issues, load-balancing, activity scheduling. Algorithms for parallel processing (MPI, PVM).