Giovanni Comoretto

Curriculum vitae

Personal information

Name:	Giovanni Comoretto
Address:	
Phone:	
E-mail:	giovanni.comoretto@inaf.it
Country and nationality:	Italy
Date of birth:	

Education

1981/10/25 Master degree in physics, University of Pisa, 110/110 cum laude

1981/10/25 Scuola Normale Superiore, degree in physics

Main work experiences

2012-2018 SKA CSP consortium

Italian representative in the CSP board

2002-present INAF – Arcetri Observatory, Astronomer Associate

Head of Arcetri Radioastronomy laboratory

Main projects

SRT: design of a first light multichannel spectrometer for cm wavelengths (XARCOS).

Radionet-FP7: Design of a multichannel digital radio receiver on the Uniboard and Uniboard-2 FPGA based platforms.

Design of digital downconverter and polyphase filterbank for the DBBC platform.

ALMA: Study of the effects of the digital signal processing in radioastronomic interferometers, and of numeric correction techniques. Integration and test of the ALMA correlator.

SKA: Initial design of the LOW correlator and of the LFAA beamformer. Detailed study and FPGA implementation of the beamformer signal processing chain. Support to SKAO on digital processing. Definition of LFAA signal interfaces and requirements. Modelling of LOW and MID correlator signal processing chain. Research on new pulsar dedispersion algorithms.

1996-2002 INAF – Arcetri Observatory, Astronomer Associate

Main projects

Design and construction of digital instrumentation for the Italian radiotelescopes. In particular, design of a 4096 channel digital spectometer for the Medicina and

Noto telescopes, and of digital tone extractor units for multi-antenna precision Doppler tracking.

A new design has been proposed for the ALMA interferometer correlator, increasing its spectral resolution by a factor of 30. This design has been adopted by ESO, implemented by a collaboration between Arcetri and Bordeaux observatories, and is currently a key element of the ALMA spectroscopic capabilities.

1987-1995 Arcetri Observatory, Astronomer

Main projects:

Observation of molecular emission lines at cm wavelengths. Compilation of a complete catalogue of H2O maser sources. Long term behavior of molecular H2O masers. Correlation between maser and infrared emission in star forming regions.

Holographic measurements of the Medicina VLBI telescope surface using satellite beacons and H2O masers as reference sources.

Precision Doppler tracking of interplanetary spacecrafts for gravitational wave detection, and for precision relativity measurements.

Study for the upgrade of the Cassini radio science system to the Ka band, and for a plasma noise multigfrequency cancellation scheme. The system was crucial for the measurement of the post-newtonian γ parameter.

Development of the acquisition electronics for the NICS near infrared camera at the telescopio nazionale Galileo (TNG)

1985/02-1985/06 Californa Institute of Technology, Research Associate

VLBI mapping of superluminar radio sources. First map of quasar 3C273 with high north-south resolution.

1984-1986 CNR – Istituto di Radioastronomia

Main projects:

Instrumentation setup for the Medicina VLBI radiotelescope. Antenna control and pointing software, setup and maintenance of the VLBI equipment, telescope observation scheduling and management.

Desing and construction of a digital tone extractor for precision Doppler tracking of interplanetary spacecrafts.

VLBI observations of low luminosity compact radio sources. Observation of molecular lines in star forming regions.

1982-1983 Arcetri Observatory, postdoc student

Design and construction of a wideband autocorrelation spectrometer for molecular line spectroscopy a cm wavelength. Design of the instrument and of the associate control software.