Contribution ID: **19** Type: **not specified**

ERIS: the new 1-5μm Adaptive Optics Instrument extending and enhancing imaging and spectroscopy capabilities for VLT

Monday, February 17, 2020 11:45 AM (25 minutes)

The Enhanced Resolution Imager and Spectrograph (ERIS) is the new Adaptive Optics (AO) instrument for the VLT aiming to replace NACO and SINFONI. Its development is led by a Consortium of Max-Planck Institut fuer Extraterrestrische Physik (MPE), UK Astronomy Technology Centre, ETH Zurich, Leiden University, European Southern Observatory (ESO) and Istituto Nazionale di Astrofisica (INAF). ERIS will host a new high-resolution coronagraphic camera (NIX) ranging from 1 to 5 microns and SPIFFIER, a refurbishment of the Integral Field Unit spectrograph currently installed in SINFONI, covering J, H and K bands. ERIS will be installed at the Cassegrain focus of the VLT UT4, which is also hosting the Adaptive Optics Facility (AOF) sharing with ERIS the 1170-actuator Deformable Secondary Mirror and the Sodium Laser Facility. The ERIS AO system is developed by INAF with ESO's collaboration, and provides a Natural Guide Star (NGS) mode to deliver high contrast correction and a Laser Guide Star (LGS) mode to extend high Strehl performance to large sky coverage, enabling observations from exoplanets to high redshift galaxies. INAF responsibility in ERIS project is not only limited on AO, but it is also extended to the supply of the on-board Calibration Unit (CU) and the leading of the Instrument Software development.
The ERIS structure is currently in Arcetr where the AO module and the CU have been integrated. AO module successfully passed the Acceptance in December 2019 and it is going to be shipped to MPE early February 2020 for the integration of NIX and SPIFFIER, before running the ESO formal acceptance process in Europe as a whole instrument, enabling the shipment to Paranal.
This contribution describes the instrument concept, outlines its expected AO performance, the related operational modes, and highlights where it will be mostly competitive.

Primary authors: Dr RICCARDI, Armando (INAF-Osservatorio Astrofisico di Arcetri); Dr GUIDO, Agapito (INAF-Osservatorio Astrofisico di Arcetri); Mr VALDEMARO, Biliotti (INAF-Osservatorio Astrofisico di Arcetri); Dr MARCO, Bonaglia (INAF-Osservatorio Astrofisico di Arcetri); Dr RUNA, Briguglio (INAF-Osservatorio Astrofisico di Arcetri); Mr LUCA, Carbonaro (INAF-Osservatorio Astrofisico di Arcetri); Dr SIMONE, Esposito (INAF-Osservatorio Astrofisico di Arcetri); Dr PAOLO, Grani (INAF-Osservatorio Astrofisico di Arcetri); Mr PUGLISI, Alfio Timothy (Istituto Nazionale di Astrofisica (INAF)); Dr MARCO, Xompero (INAF-Osservatorio Astrofisico di Arcetri); Dr MAURO, Dolci (INAF-Osservatorio Astronomico d'Abruzzo); Dr GIANLUCA, Di Rico (INAF-Osservatorio Astronomico d'Abruzzo); Dr ANDREA, Baruffolo (INAF-Osservatorio Astronomico di Padova); Dr BERNARDO, Salasnich (INAF-Osservatorio Astronomico di Padova)

Presenter: Dr RICCARDI, Armando (INAF-Osservatorio Astrofisico di Arcetri)

Session Classification: The italian way to AO