ID de Contribution: **24** Type: **Oral contribution**

MAORY LO sensors control strategy and sky coverage assessment

lundi 22 octobre 2018 17:00 (20 minutes)

Summary

The future E-ELT instrument MICADO will benefit from a wide-field correction provided by MAORY, a Multi-Conjugate Adaptive Optics (MCAO) module. The sky coverage of the whole system will be limited by the performance of the 3 natural guide star (NGS) sensors, that will estimate low-order modes (tip/tilt, focus and astigmatism). In a preliminary work, we fixed the design of these sensors to 2x2 Shack-Hartmann working in H band. Then, the performance mostly depends on the high-order correction that is applied in the NGSs' lines of sight and on the wavefront control strategy. In the presented study, we evaluate the sky coverage for different configurations of the system: number of post-focal Deformable Mirrors (DM), size of the technical field of view, use of a dedicated DM in each LO sensor's path (so-called Dual AO) ⋯The method to compute the overall system performance with any NGS asterism uses a combination of analytical formulas and end-to-end MCAO simulations, as well as a first assessment of the error budget terms that do not depend on the AO control itself. We will discuss on the relative performance of the different configurations, as well as the limitations of this study.

Auteur principal: Dr PLANTET, Cedric (INAF - Osservatorio Astronomico di Arcetri)

Co-auteurs: Dr DIOLAITI, Emiliano (INAF - Osservatorio di Astrofisica e Scienza dello Spazio di Bologna); M. AGAPITO, Guido (INAF - Osservatorio Astronomico di Arcetri); Dr BUSONI, Lorenzo (INAF - Osservatorio Astronomico di Arcetri); Dr BELLAZZINI, Michele (INAF - Osservatorio di Astrofisica e Scienza dello Spazio di Bologna); Dr CILIEGI, Paolo (INAF - Osservatorio di Astrofisica e Scienza dello Spazio di Bologna); Dr FEAUTRIER, Philippe (Institut de Planétologie et d'Astrophysique de Grenoble); Prof. ESPOSITO, Simone (INAF - Osservatorio Astronomico di Arcetri)

Orateur: Dr PLANTET, Cedric (INAF - Osservatorio Astronomico di Arcetri)

Classification de Session: Wide Field Adaptive Optics