ID de Contribution: **31** Type: **Oral contribution**

Phase diversity as a tool to sense non-common path aberrations in SHARK-NIR: strategies and simulated performance.

mercredi 24 octobre 2018 12:30 (20 minutes)

Summary

Phase diversity is a focal plane wavefront sensing technique that allows to retrieve the instrumental aberrations starting from two images of whatever object, one of which (the diverse image) is intentionally corrupted by a known aberration. We present here the results of a simulation campaign aimed at assessing the validity of this approach for sensing non-common path aberrations (NCPA) in the SHARK-NIR instrument, the second-generation high-contrast imager for the Large Binocular Telescope. NCPA have been modeled on a realistic error budget of the instrument and introduced as input to an end-to-end Fresnel simulator to generate the two images required by the algorithm. Two approaches are compared, one using natural light in closed-loop and one using the instrument internal calibration source. Both a modal and zonal reconstruction algorithm have been tested. The reconstructed phase is projected onto the actuator space of SHARK-NIR internal deformable mirror (the corrector) in order to account for the fitting error introduced by the mirror itself.

Auteur principal: Dr VASSALLO, Daniele (INAF-Osservatorio Astronomico di Padova)

Orateur: Dr VASSALLO, Daniele (INAF-Osservatorio Astronomico di Padova)

Classification de Session: Non Common Path Aberrations