
NGSs acquisition in MORFEO

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Abstract

MORFEO (Multi-conjugate adaptive Optics Relay For ELT Observation) is the future multi-conjugate adaptive optics system for the ESO ELT that will feed the instrument MICADO (Multi-AO Imaging Camera for Deep Observations). It will use the 6 laser guide stars to give a uniform correction on a field-of-view of approximately 60arcsec of diameter. Tip, tilt and slow focus measurement will be done on up to three natural guide stars that could be really faint to maximize sky coverage. The current baseline is to use the reference wavefront sensor in the visible to acquire the star and center it on the low order wavefront sensor that has a much smaller field-of-view. In this work we study this problem focusing on the estimation error of the tilt from the reference wavefront sensor as a function of star magnitude and atmospheric conditions.

Keywords: ELT, MCAO, NGS, star acquisition, wavefront sensing

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