
Guiding on the ELT with HARMONI's LTAO system

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Abstract

HARMONI is the first light visible and near-IR integral field spectrograph for the ELT. It covers a large spectral range from 450nm to 2450nm with resolving powers from 3500 to 18000 and spatial sampling from 60mas to 4mas. It can operate in two Adaptive Optics modes - SCAO (including a High Contrast capability) and LTAO - or with NOAO. Recently the LTAO system has been upgraded to be able to use a second natural guide star to guide the telescope and stabilise the field during observations. In this contribution, we present the requirements placed on the sensor observing this second guide star and how its design was chosen to comply with them. In particular, we detail the simulations made in order to assess guiding performances in new challenging conditions, i.e. with a partially AO-corrected PSF that can be both close to or far from the axis of correction.

Keywords: Wavefront sensing, ELT, LTAO

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