
Optimization of the performance of the MORFEO CU

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Abstract

After the Preliminary Design Review, the Calibration Unit (CU) of MORFEO, the Multiconjugate adaptive Optics Relay for ELT Observations, underwent a complete design overhaul. This process was aimed at trying to mitigate some critical aspects of the manufacturing, both in terms of optics and mechanics. While its optical configuration proved to be the best choice to meet the system requirements, especially on external interfaces, a slightly different layout has been investigated. By changing the displacement of the large beam splitters and applying small changes to a few optical elements, it would be possible to obtain a significant increase in the overall optical quality, for both the NGS and LGS arms. Moreover, some important modification to the mechanics could actually decrease the complexity of the assemblies and adjustments, also allowing a better accessibility to the CU from all sides, thus facilitating the MAIT operations. We present an overview of this new possible layout of the MORFEO CU.

Keywords: Calibration, manufacturing, design, mechanics, MCAO, MORFEO

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