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The Adaptive Optics Module of MAVIS: preliminary design and trade-offs

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The Adaptive Optics Module (AOM) of MAVIS consists in a MCAO system aimed to deliver a corrected visible field of view to the MAVIS imager and spectrograph. The module takes advantage of the ESO VLT UT4 Adaptive Optics Facility, including the telescope deformable secondary mirror and the laser guide stars lauching and control systems. The preliminary design of the AOM required a number of trade-offs, carried on during the early Phase-A of MAVIS project. These include also the selection of the best suitable solutions at conceptual system level, aiming, as much as possible, at a no-compromise approach in terms of system performances, especially referring to sky coverage, which is known to be a critical aspect for MAVIS science cases. In this framework, I will present the current status of the AOM design and will report on how some science and opto-mechanical trade-offs, which required dedicated analysis and simulations, impact the system parameters and the AO performance estimations.

Primary author: VIOTTO, Valentina (Istituto Nazionale di Astrofisica (INAF))

Co-author: MAVIS TEAM (INAF/LAM/ONERA/AAO/ESO)

Presenter: VIOTTO, Valentina (Istituto Nazionale di Astrofisica (INAF))