
Performance of large-format deformable mirrors constructed with hybrid variable reluctance actuators III: laboratory measurements of dynamic behavior

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Abstract

Advancements in high-efficiency hybrid-variable reluctance actuators are an enabling technology for building the next generation of large-format deformable mirrors, including adaptive secondary mirrors. We present our performance results from laboratory bench testing of prototype large-format deformable mirror technology constructed by The Netherlands Organization for Applied Scientific Research (TNO). We overview how we achieved high-speed spatial measurements using the Quadrature Polarization Interferometer testbench located at the UC Santa Cruz Laboratory for Adaptive Optics combined with capacitive sensors internal to the deformable mirror. We report the dynamic performance of the TNO deformable mirror technology in the context of future use in high-contrast imaging systems.

Keywords: Large, format deformable mirrors, Adaptive secondary mirrors, Hybrid variable reluctance actuators, High, contrast imaging

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