

## **A high order pyramid WFS AO system for DAG, the new 4-m Turkish telescope: progress report**

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An adaptive optics system for the future 4-m Turkish telescope, to be installed in Eastern Anatolia, is being developed. It uses a pyramid WFS with a no noise NUVU camera, allowing a relaxation of the pyramid prism manufacturing tolerances. The deformable mirror is a high order high stroke 468 actuators mirror from ALPAO. Coupling the two technologies allows us to maximise the correction efficiency for any turbulence and guide star conditions, significantly increasing the envelope of the Strehl correction for each guide star magnitude. In K-band, we will be able, in the median seeing conditions of the site (0.9") to run the system in extreme-AO mode, allowing stellar coronagraphy. We are also studying the option to implement a simple machine learning algorithm for the AO control. In this project progress presentation, we will show the final optical design, the preliminary measurements we with the P-WFS, and the first tests with the DM-468 at ALPAO premises.

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