

Author:

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Venue:

17 July 2014, 12:00-13:00, Telescopium (old Auditorium)

Title:

Active optics in wide-field telescopes based on PSF elongation patterns

Abstract:

We study a novel active optics control scheme at the VST, an  $f/5.5$  survey telescope with a  $1\times 1$  degree field of view and a 2.6m primary mirror. This scheme analyzes the elongation pattern of the star PSFs across the full science image (267 Mpixels) and compares their second moments with an analytical model based on 5<sup>th</sup>-order geometrical optics, comprising 9 degrees of freedom in mirror misalignments and deformations. Using a numerical optimization method, we can complete the star extraction and fitting process in about 50 seconds, fast enough for effective closed-loop active optics control in survey observing cadences.