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Exploiting post-AO fast-cadence high-contrast imaging data in the visible

Tuesday 18 February 2020 16:00 (18 minutes)

Diffraction-limited frames sequences, containing millions of pupil-stabilized images acquired at kHz rate after Extreme Adaptive Optics (ExAO) correction, will be the baseline outcome of SHARK-VIS, the forthcoming high-contrast imager in the visible band for the Large Binocular Telescope (LBT).

Such fast-cadence imaging concept allows us to freeze the evolution of the ExAO residual speckles, opening the possibility to fully exploit the temporal information within the data and improve high-resolution and high-contrast performances.

In the framework of the SHARK-VIS pipeline, we will present the results of real on-sky acquisitions at LBT, by showing the processing flows of some standard algorithms and of the novel methods we are developing, capable of pushing the contrast to the noise limit and the resolution to the theoretical diffraction.

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