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Search for Habitable Exoplanets with the ELT and the role of Adaptive Optics

Wednesday 2 October 2024 14:30 (1h 30m)

The lecture will present the current understanding of habitable exoplanets and discuss how high-contrast direct imaging using the Extremely Large Telescope (ELT) can enhance this knowledge. To achieve this, a specialized instrument must meet certain requirements. I will introduce a potential design for such an instrument, referred to as the Planetary Camera and Spectrograph (PCS). A key feature of PCS is an optimized eXtreme Adaptive Optics (XAO) system, integrated with coronagraphy and speckle suppression techniques, aimed at delivering high contrast on the order of 1e-8 at angular separations of a few tens of milliarcseconds. I will detail these subsystems, explain the necessary specifications, and outline our research and development efforts to demonstrate how these requirements can be achieved.

Presenter: Dr KASPER, Markus (ESO)

Session Classification: Class