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Science cases for SHARK-NIR@LBT

Thanks to notable advancements in adaptive optics combined with coronagraphic observational strategies, high-contrast imaging techniques are rapidly progressing in the current years. The exploration of the sub-stellar regime via direct imaging, hampered so far by technical limitations, is starting to provide us with a powerful tool, thanks to the advent of new-generation instruments (e.g., GPI, SPHERE). SHARK-NIR is a new facility that combining extreme adaptive optics with coronagraphy, dual-band imaging, and long-slit coronagraphic spectroscopy will be operating at LBT by the end of 2018. In the exoplanet framework, we aim at revealing (and characterising) relatively massive exoplanets at few tenths of arcsecond separations and contrasts around 10^{-6} ; moreover other science cases will be addressed, from jets and disks around young stellar objects to distant AGN and QSOs. I will present in this contribution the main scientific drivers for SHARK-NIR and its combination with current and foreseen instrumentation at LBT.

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