

CRIRES+, a high-resolution near-infrared spectro(polari)meter at the 8m Very Large Telescope

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CRIRES+ is the fully refurbished and enhanced near-infrared high-resolution InfraRed Echelle Spectrograph (CRIRES) that is offered to the entire astronomical community since 2021. In this presentation, I'd like to show the French community the capabilities of the instrument, typical raw and reduced data, compile useful resources, report on some recent science results, and answer any question you might have. Do feel free to email me beforehand <alexis.lavail@irap.omp.eu> if there are some particular points you'd like me to talk about or answer in the presentation.

CRIRES+ is an adaptive optics fed high-resolution ($R=100000$) near-infrared spectropolarimeter installed at one of the 8-m unit telescopes of the European Southern Observatory Very Large Telescope in Paranal, Chile. CRIRES+ operates in spectroscopy mode from 0.95 to 5.2 μm (YJHKLM bands) and in spectropolarimetry mode between 0.95 and 2.5 μm (YJHK). The instrument boasts an overall increase in efficiency compared to the original CRIRES, a tenfold increase in simultaneous wavelength coverage thanks to a new cross-dispersed design (the spectral grasp is now ~ 150 nm), and improved stability and repeatability. The data reduction pipeline was also rewritten from scratch.

The unique combination of the 8-m VLT collecting power, the $R=100000$ spectral resolution, and spectroscopic coverage up to 5.2 μm can make CRIRES+ a interesting instrument for some of you for e.g the study of exoplanetary atmospheres, stellar magnetism, low-mass objects etc ..