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Ground based spectroscopy of hot Jupiters

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It has been shown in recent years with great success that spectroscopy of exoplanetary atmospheres is feasible using space based observatories such as the HST and Spitzer.
However, with the end of the Spitzer cold-phase, space based observations in the near to mid infra-red are limited, which will remain true until the the onset of the JWST. The importance of developing methods of ground based spectroscopic analysis of known hot Jupiters is therefore apparent.
In the past, various groups have attempted exoplanetary spectroscopy using ground based facilities and various techniques. Here I will present results using a novel spectral retrieval method for near to mid infra-red emission and transmission spectra of exoplanetary atmospheres taken from the ground and discuss the feasibility of future ground-based spectroscopy in a broader context.

My recently commenced PhD project is under the supervision of Giovanna Tinetti (University College London) and in collaboration with J. P. Beaulieu (Institut d'Astrophysique de Paris), Mark Swain and Pieter Deroo (Jet Propulsion Laboratory, Caltech).