
Characterization of exoplanet atmospheres with the JWST MIRI instrument

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Abstract

The next large facility with the potential to characterize the atmosphere of exoplanets will be the James Webb Space Telescope (JWST), a 6.5 m telescope to be launched in 2018. The JWST will be equipped with four instruments; three in the near InfaRed (1-5 microns): NIRCAM, NIRSPEC and NIRISS, and one in the mid-InfraRed (5-28 microns): MIRI. MIRI is of particular interest to characterize temperate exoplanets; it includes an imager with three observing modes: imagery, coronagraphy and low resolution (R=100) spectroscopy, and an Integral Field Spectrometer with a spectral resolution around 3000. I will discuss the capabilities of the instrument to characterize exoplanets, showing simulations of transit observations, as well as direct imaging observations, which include instrumental test results. It should be stressed that the JWST is not dedicated to exoplanets and we can expect a large pressure on the observing time.

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