

Großes Physikalisches Kolloquium an der Universität zu Köln

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Planets are Places: Exoplanet Atmosphere Characterisation in the JWST Era

The past 25 years have revealed a diversity of exoplanets far beyond what was imagined from the limited sample in the Solar System. With new and upcoming observing facilities and a rapidly growing number of nearby planets, we are beginning to bring this diversity into focus, with detailed follow-up characterization of the planets' atmospheres. In this talk, I will focus on two key questions in exoplanet atmosphere studies: (1) what can we learn about giant planets' origins from their present-day atmospheres? And (2) what can we learn about habitability from "Earth cousins", planets that are a little bigger or a little hotter than the Earth? I will provide some historical context on these two questions, share a few preliminary results from the first JWST observations of transiting planets, and conclude with a long-term perspective on exoplanet atmosphere characterization through the 2040s, including the search for biosignatures in the atmospheres of potentially inhabited planets.

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16³⁰ Uhr
HS III

