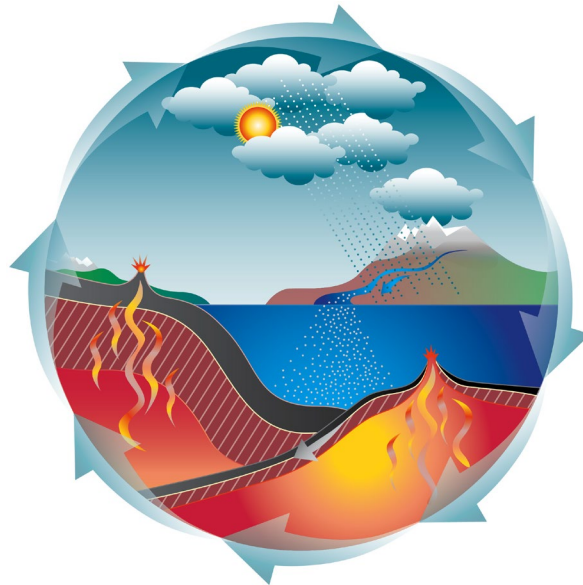




# PHYSIKALISCHES KOLLOQUIUM

AM 16. DEZEMBER 2024 UM 17 UHR C.T.  
IM GROßEN HÖRSAAL



## “EXOPLANETS AND THEIR ATMOSPHERES”

KEVIN HENG

*LMU MÜNCHEN*

The detection of exoplanets has become routine in modern astronomy. We are currently in the age of characterisation, where astronomers routinely measure spectra from the atmospheres of exoplanets as a probe of their chemistry. From the atmospheric chemistry, one hopes to decipher the formation history and/or habitability conditions of an exoplanet.

In the colloquium, I will review three important sub-topics: “reading” spectra of exoplanetary atmospheres, constraining the properties of clouds/hazes using reflected light and understanding how rocky exoplanets produce their atmospheres via geochemical outgassing. For the first sub-topic, I will discuss recent work done on the hot Jupiter WASP-39b and focus on key limitations. For the second sub-topic, I will demonstrate that the shape of reflected light phase curves encode important information on the properties of clouds/hazes. For the third sub-topic, I will discuss how the atmospheres of rocky exoplanets are probably sourced by geochemical outgassing. In the exoplanet population, there are probably examples of “hybrid atmospheres” that are produced by rocky mantles outgassing into primordial hydrogen-helium envelopes. The next step of understanding requires merging knowledge from astrophysics and the geosciences. I will highlight our long-term vision for geoastronomy in the coming decade.

AKTUELLE INFORMATIONEN FINDEN SIE HIER: [WWW.PHYSIK.UNI-FREIBURG.DE](http://WWW.PHYSIK.UNI-FREIBURG.DE)