

## Einladung zu einem Kolloquium

Datum/Zeit: **Dienstag, 19.11.2024, 16.45 Uhr**

Referent: **Dr. Audrey Chatain**  
Laboratoire Atmospheres and Space Observations (LATMOS),  
Solar System Department, Guyancourt, France

Titel: *Titan's climate: understanding the methane cycle and the influence of solid aerosols from experimental and numerical simulations*

Ort: **HCI J3**

Titan, Saturn's largest moon, is a place both exotic and familiar for us. Like on Earth, its atmosphere is mainly composed of N<sub>2</sub>, and its surface pressure is 1.5 bar. However, Titan's surface is much colder, at -180°C. Titan hosts a complex methane cycle, similar to the water cycle on Earth, including methane rain, rivers, lakes and seas. Another specificity of Titan is the huge quantity of organic aerosols that fills its atmosphere, making it appear uniformly orange from space. These solid grains are formed by photochemistry in the upper atmosphere (as might have happened on the Early Earth). They accumulate in haze layers all around the moon and strongly impact its climate. At LATMOS, we put a lot of efforts in understanding Titan. We have laboratory experiments to mimic the formation and evolution of Titan's aerosols. In addition, we are developing numerical climate simulations to understand the processes at work. In the last years, we also started to prepare new instruments for the future NASA mission Dragonfly that will explore Titan with an instrumented drone in the mid-2030s.

**Gäste sind willkommen**