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3D Modelling of methane convective clouds on Titan

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Methane is the second most abundant component of Titan's atmosphere (~5% at the surface). The temperature and pressure enables liquid methane at the surface, forming lakes. In the atmosphere, methane can condense and form clouds, and rain. Titan clouds are monitored from Earth telescopes, but detailed images are scarce and come from the Cassini-Huygens mission that took place between 2004 and 2017. To know more about methane convective clouds, we use a new cloud resolving model adapted to Titan. The model is composed of dynamics coming from the WRF model (a model widely used for Earth meteorology), and of a physical part coming from the Titan-Planetary Climate Model (de Batz de Trenquelléon 2025). Here we present the first results of this model.

Astrophysics Field

Planetology

Author: MOISAN, Enora (Laboratoire de Météorologie Dynamique (LMD))

Co-auteurs: Dr CHATAIN, Audrey (LATMOS); Prof. SPIGA, Aymeric (LMD)

Orateur: MOISAN, Enora (Laboratoire de Météorologie Dynamique (LMD))

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