

Modeling exoplanet atmospheres

Pascal Tremblin¹

¹ *Maison de la Simulation, CEA Paris-Saclay, France*

The spectral characterization of exoplanet atmospheres started with Spitzer, Hubble Space Telescopes and ground-based observatories (e.g. VLT/Sphere, Gemini/GPI) will be revolutionized by the arrival of the James Webb Space Telescope (JWST). In this talk, I will review the recent efforts, progresses and remaining challenges in the modeling of exoplanet atmospheres in the light of past and upcoming observations. The precision that will be reached with upcoming observations clearly advocates for the need to push for multi-scale (in space and time) and multi-physics (chemistry, radiative transfer, hydrodynamics) modeling approaches in order to correctly infer the chemical composition of exoplanet atmospheres.