



ID de Contribution: 33

Type: **Oral presentation**

## **Exoplanets transit spectroscopy with James Webb Space Telescope : From detection to characterization.**

*jeudi 27 février 2020 11:00 (15 minutes)*

Since the first exoplanet detection in 1995, more than 4000 planets have been discovered. In the past twenty five years, the observations tools have greatly improved, increasing the statistics and revealing the diversity of planets. With the upcoming space telescopes such as James Webb and Ariel, detailed knowledge of exoplanet atmospheres will become possible. This opens up new challenges in data treatment, to detrend the signal of planet's atmosphere from other sources of signal, especially systematic noise and drifts from the instrument. Good knowledge and modelling of these characteristics are necessary, in addition to that of the astrophysical properties. To meet this challenge, new methods are being developed in the community. In order to evaluate their performances and to study the ultimate performance of the instrument, we created realistic synthetic observations. This includes detailed astrophysical properties, as well as the detector response and the systematic behaviour of the instrument. This work allows us a better understanding of the influence of the instrument's behaviour on the data quality and sensitivity of the observation. With this information, we can investigate which physical properties of the star and the planet are significant for the expected performance. The synthetic data produced will be used for the MIRI-ERS data challenge next year.

### **Field**

Planetology (including small bodies and exoplanets)

**Auteurs principaux:** MARTIN-LAGARDE, Marine (CEA-Saclay); Dr LAGAGE, Pierre-Olivier (CEA-Saclay); Dr MORELLO, Giuseppe (CEA-Saclay); Dr COULAIS, Alain (LERMA, Observatoire de Paris)

**Orateur:** MARTIN-LAGARDE, Marine (CEA-Saclay)

**Classification de Session:** Talk

**Classification de thématique:** Astrophysics