



Contribution ID: 29

Type: **Oral**

## The chemical composition of protoplanetary disks

*Monday, 21 October 2019 14:10 (25 minutes)*

Protoplanetary disks contain the ingredients for the bulk and atmospheric composition of planets. Addressing the physical conditions and chemical composition of disks is thus important to understand the origin of planets and their atmospheres. In particular, it is debated to what extent planets (a) inherit their composition directly from the interstellar medium (inheritance) or (b) whether there is a chemical reset during the collapse of the molecular cloud and the formation of the disk (reset). Both regimes are likely to take place simultaneously in disks across different spatial regions.

Multi-wavelength observations give us insights on the chemical compositions in different region of the disk at the time of planet formation: infrared spectroscopic observations are sensitive to the warm (gas temperature  $> 100$  K) disk region (mostly the uppermost layers) while observations in the (sub-)millimeter range trace the cold gas phase component in the disk interior.

A major role in this field is played by the Atacama Large Millimeter Array (ALMA) thanks to its unprecedented sensitivity and angular resolution. I will present some recent ALMA results in terms of chemical composition, radial distribution of molecules and elemental abundance ratios.

**Primary author:** FEDELE , Davide (Istituto Nazionale di Astrofisica (INAF))

**Presenter:** FEDELE , Davide (Istituto Nazionale di Astrofisica (INAF))

**Session Classification:** Protoplanetary disks