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Chemical inventory of a planet hosting disk

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PDS 70 is the only disk known to date that hosts two massive planets clearing a large cavity in the dust distribution. The planets have been detected in both infrared and Halpha, indicating that they are still actively accreting from the planet-hosting environment. The elemental composition of the growing planetary atmospheres are bound to be related to the composition of the accreting material. Bright molecular lines of simple chemical species can be used to infer chemical properties of the material that is being accreted by the planets (as C/O and C/N ratios), as well as physical processes presently occurring in the disk (shocking of gas onto the circumplanetary disks, ionisation). In this talk, I will show new ALMA band 6 observations of PDS 70 at moderate angular resolution in two spectral settings targeting HCN and CO isotopologues, small hydrocarbons, H2CO, H13CO+ and simple S bearing molecules. The molecular emission is particularly bright, with 15 molecular lines detected and imaged. The radial and azimuthal structures of the different molecules provide unique information on the chemical and physical conditions of PDS 70.