Title :
HD 121617 : First detection and characterization of a bright gaseous debris disk in polarimetric scattered light with VLT/SPHERE

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Abstract :
Nowadays, a hundred of debris disks have been observed and resolved and few of them (~ 20 debris disks) contain a significant amount of gas, which raises questions about the origin of this gas (primordial or secondary).
HD 121617 is one of those gaseous debris disks. The star is a 16 Myr old A1V on the main sequence surrounded by a circumstellar dust disk together with a gas disk detected in 2017.
We present the first resolved observation of that debris disk with VLT/SPHERE, in polarized near-infrared scattered light. We detect a very bright ring of dust, with a semi-major axis of 78 au, compatible with the location of the gas ring detected with ALMA. We find that the inner edge of the dust density distribution is very sharp, which could have been sculpted by an unseen companion, or by gas dragging the dust grains.
In this contribution we present the disk morphology determined with the SPHERE images and the analysis of the dust properties based-on the previous morphology and the SED. We also performed hydrodynamical simulations to determine the dynamical effect of gas on the dust, in order to try to explain the inner edge “wall” in the dust density distribution observed with SPHERE.