

## WHAT THE SUBMM SPECTRAL LINE EMISSION IN THE NUCLEUS OF THE CIRCINUS GALAXY TELLS US ABOUT ACCRETION AND FEEDBACK IN AGN

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An Active Galactic Nucleus (AGN) is the manifestation of an actively accreting supermassive black hole in the centre of a galaxy. Submm and infrared interferometry allows us to resolve nearby AGN on parsec scales and to thus study the molecular and dusty material directly surrounding the supermassive black hole. Together with radiative transfer and hydrodynamical modelling, these observations have significantly advanced our understanding of this region crucial for the accretion onto the black hole as well as for the formation of outflows as part of feedback mechanisms.

I will present the results from observations with ALMA and the VLTI of the nearby Seyfert 2 nucleus of the Circinus Galaxy with a special focus on the submm line emission from molecular species such as CO, HCO<sup>+</sup>, HCN, and CS. The submm molecular lines reveal a geometrically thin rotating disk of dense molecular gas with some additional velocity components indicating a filamentary structure. The gas gets denser and higher excited towards the centre, with only little signs of a molecular outflow. At the same time the galaxy has a clear ionized outflow. The infrared continuum observations also reveal a central, disk-like structure plus dust extended in the polar direction, the latter being seen as evidence for a radiation driven dusty outflow.

In summary, a clear two component structure is found, composed of a dense molecular and dusty disk plus a mainly ionised and dusty polar wind, i.e. in general agreement to recent radiative and hydrodynamical models.