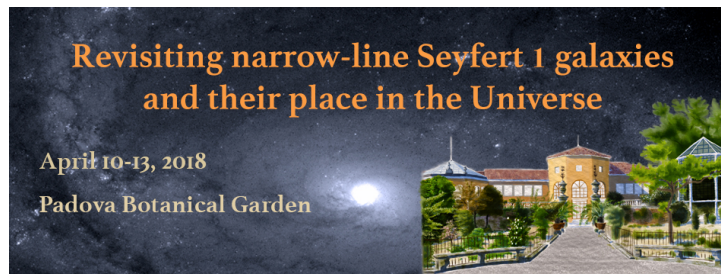


Revisiting narrow-line Seyfert 1 galaxies and their place in the Universe



Contribution ID: 22

Type: **Talk**

The Polar Dust in ESO 323-G77

Friday, 13 April 2018 09:30 (20 minutes)

The dusty torus in AGN unification has long been thought as the source of obscuration in AGN. However, until recently, we did not have the capability to directly observe this dusty structure. Advancements in the field of IR interferometry have finally allowed us to get a glimpse of the warm and hot dust structure on the scale of the putative torus. Interferometric studies of the brightest local Seyfert galaxies ($z < 0.05$) have been undertaken and of those with enough data to discern the angular dependence of the dust distribution, we do not see a simple equatorially-extended structure in the mid-IR. Instead, strong extended dust emission from the polar region is detected in most of the objects, with a subdominant compact or disk-like component in the plane of the accretion disk. In this talk, we will report results of ESO 323-G77, the first Narrow Line Sy1 galaxy (as classified by Sani et al. 2009) to be studied in detail with IR interferometry. While we do find strongly polar-elongated dust emission (axis ratio 3:1) as in other Seyfert galaxies, it is contributing only about 40% to the total mid-IR emission, and thus not dominant. 60% of the 12 μ m flux originates from an unresolved source. Using full IR SED and the 3D radiative transfer model CAT3D-WIND, we interpret that this unresolved mid-IR emission is the Rayleigh-Jeans tail of hot dust emission from the inner part of a dusty disk close to the sublimation radius. These results indicate strong similarities of the NLS1 ESO 323-G77 with the compact emission seen in two quasars (Kishimoto et al. 2011) and suggests evolution of the dust distribution with Eddington ratio.

Motivation

Grant

no

Primary author: LEFTLEY, James (ESO)

Co-authors: Dr HOENIG, Sebastian (University of Southampton); Dr TRISTRAM, Konrad (European Southern Observatory); Dr KISHIMOTO, Makoto (Kyoto University); Dr ASMUS, Daniel (University of Southampton); Dr GANDHI, Poshak (University of Southampton)

Presenter: LEFTLEY, James (ESO)