Talk at Splinter Meeting

Splinter A

STAR FORMATION IN 3CR RADIO GALAXIES AND QUASARS AT Z < 1

Christian Westhues¹, Martin Haas¹, Peter Barthel², Belinda J. Wilkes³, S.P Willner³, Joanna Kuraszkiewicz³, Pece Podigachoski², Christian Leipski⁴, Klaus Meisenheimer⁴, Rolf Chini^{1,5}

¹ Astronomisches Institut, Ruhr-Universität Bochum, ² Kapteyn Astronomical Institute, University of Groningen, ³ Harvard-Smithsonian Center for Astrophysics, Cambridge, ⁴ Max-Planck-Institut für Astronomie (MPIA), Heidelberg, ⁵ Instituto de Astronomía, Antofagasta

A representative sub-sample of 87 radio-loud sources at redshifts z < 1 was observed with the Herschel Space Observatory. We used the new far-infrared data to quantify the dust-enshrouded star formation and to analyse the orientation effects predicted by the unified model.

For high-excitation radio galaxies and quasars good agreement with the unified model was found. In contrast, sources which are weak in the mid-infrared also show low emission in the far-infrared, which can not be explained solely by orientation effects.

The radio-loud sources are hosted by the most massive galaxies with more than 100 billion solar masses. In comparison to radio-quiet galaxies only less than 10% shows prodigious star formation. Either the hosts are devoid of interstellar medium or the powerful active galactic nuclei quench the formation of stars.