



Quinto workshop sull'astronomia millimetrica in Italia

Bologna, June 12-14, 2023

Contribution ID: 63

Type: **not specified**

## **Eleonora Torresi - Cold molecular gas and nuclear activity in radio galaxies: Linking properties on macro and micro scales**

*Monday, 12 June 2023 15:30 (1 minute)*

Cross-population radio galaxies (FR II-LERG, i.e., powerful radio sources with an inefficient engine) are a powerful tool to investigate the long-standing relation between accretion and ejection. Indeed, they break the classical one-to-one correspondence between accretion mode and radio morphology by separating the effects of optical and radio classifications. To shed light on the nature of FR II-LERG, we present a comparative study of the X-ray and CO properties of a sample of nearly a hundred sources classified in the radio (FR I/FR II) and optical (HERG/LE RG) bands. X-rays probe the AGN's innermost regions (sub-pc scale) and allow us to estimate the accretion rate free from contamination effects accurately. CO emission lines represent the best tracer of the molecular ISM, considered a fuel for AGN activity. This systematic and uniform study will help us verify if FR II-LERG are evolved sources, i.e., they now miss the cold fueling material that made them shine in the past

**Session Classification:** Posters: 1-minute talks