

*Invited Talk //*

Active Galactic Nuclei (AGNs)



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Radio-loud Active Galactic Nuclei (AGN) host galaxies are known to produce jets sufficiently powerful to disrupt and even expel gas from their host galaxies. With optical integral field unit (IFU) MUSE observations, we observe rest-UV line emission from gas that has been chemically enriched through previous star-forming epochs and also photoionised by the AGN. In cases where the jet axes are aligned with the extended ionised gas morphologies, we find a clear feedback association between the high energy output of the jets and the ionised gas. Additional evidence for such AGN feedback is seen in the very complex Ly-alpha halo morphologies which are prevalent around radio galaxies at Cosmic Noon ( $z \sim 3$ ). With ALMA, we trace the cold gas component of the interstellar medium (ISM) in the radio galaxies via neutral carbon emission. With our findings indicating only faint traces of emission, we infer cold molecular gas fractions of  $<20\%$ . From this, we conclude that both gas depletion through star-formation and molecular gas outflows driven by the jets lead to a diminished gas supply in the ISM. Overall, our MUSE and ALMA studies add significantly to the body of work in galaxy studies that illustrate the impact of AGN in terminating star-formation via powerful jets that these objects produce.