



Contribution ID : 29

Type : **Contributed talk**

Leveraging CANFAR and the ALMA archive to create SALVAGE - II: the effect of AGN feedback on central molecular gas

Wednesday, 28 October 2026 13:35 (10)

Understanding the mechanisms that drive and halt star formation requires an assessment of both the stellar and gaseous components of a large statistical sampling of galaxies. For Canadian astronomers, large optical surveys have adequately serviced the stellar components, but large samples of resolved molecular gas observations are challenging to acquire. However after 13+ years of operations, the ALMA Science Archive has accumulated an untapped wealth of molecular gas observations waiting to be analyzed as an ensemble. Enabled by the CANFAR Science Platform, the SDSS-ALMA Legacy-Value Archival Gas Exploration (SALVAGE) dataset encompasses ~300 galaxies with optical data from the Sloan Digital Sky Survey (SDSS) and CO(1-0) maps from ALMA. Together, these products allow for a “semi-resolved” perspective of the gas and stars, meaning that the inner ~2kpc (set by the SDSS spectroscopic fibre diameter) and outer regions can be independently studied.

In this presentation, I will use SALVAGE to quantify how feedback from an active galactic nucleus (AGN) affects the molecular gas. Although simulations show that AGN feedback can remove gas from galaxies, nearly all observational studies of low-redshift AGN show no evidence of gas depletion. Recent works have found that **AGN can only remove gas from the central regions**, but are limited to small samples. SALVAGE allows us to test this result with substantially larger statistics. Using a sample of 70 AGN and matched non-AGN controls, I will assess whether AGN hosts show evidence for reduced central molecular gas, providing observational constraints on the role of AGN in galaxy evolution.

Did you give a contributed talk at CASCA 2026?

No

If you are selected for a poster, would you be interested in giving a short flash talk on your work?

Yes

What is your career level?

Postdoctoral

Which keyword describes the area of focus of this talk?

Galaxies

Primary author(s) : WILKINSON, Scott (Queen's University)

Presenter(s) : WILKINSON, Scott (Queen's University)

Session Classification : Galaxies, Gas/dust, Solar system & Stars