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Type : **Poster**

Constraining the Effects of Feedback on Diffuse Gas with Hydrodynamic Simulations

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Feedback from stars and Active Galactic Nuclei (AGN) plays an important role in galaxy formation, impacting star formation and gas conditions across a range of physical and temporal scales. Hydrodynamic cosmological simulations rely on feedback to match observations of global properties of galaxies, but they vary dramatically in their treatment of the underlying physical mechanisms. One promising means of better constraining AGN feedback models is through the circumgalactic medium (CGM). In this talk, I will begin by exploring how the AGN feedback prescriptions in a range of cosmological simulations shape the CGM. I will assess the observability of these differences by generating mock thermal Sunyaev-Zel'dovich and X-ray observations and comparing them against stacked CGM observations. In the second half of this talk, I will share my work using high resolution X-ray spectroscopy from the XRISM telescope to test AGN feedback models at larger mass scales, exploring the dynamics of the intracluster medium. I will also talk about how XRISM has impacted our understanding of stellar feedback processes, using observations of the starburst galaxy M82 to test longstanding models of supernovae-driven winds.

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

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Session Classification : Galaxies