



Contribution ID: 19

Type: **live talk**

Resolved stellar feedback in the nearby Universe

Wednesday, 7 July 2021 11:40 (20 minutes)

Feedback from massive stars plays a central role in shaping the evolution of galaxies. Conversely, different galactic environments play a central role in regulating the impact of massive stars. Yet, despite a solid qualitative understanding of feedback, our quantitative knowledge remains poor, and until recently, only a small number of star-forming regions had adequate observational information on both gas and stars needed for detailed feedback studies.

In this talk I will present recent results of large IFU nearby galaxy surveys, showcasing how these can be used to simultaneously characterize the feedback-driven interstellar medium and individual feedback-driving stars up to Mpc distances, unlocking spatially resolved studies of orders of magnitude more star-forming regions than previously possible. I will then show how this enables the first empirical quantification of the interdependence between stellar feedback and the environments massive stars form in.

More importantly, within the context of the above I will discuss how MAVIS will significantly advance our understanding of stellar feedback across nearby galaxies: the improved blue wavelength coverage, the vastly greater spatial resolution, and the much better spectral resolution will make MAVIS by far superior to other IFUs (e.g. MUSE, KCWI) not only to characterize massive stars, but also to perform unprecedented detailed studies of the feedback-driven gas.

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Session Classification: Resolving the contents of nearby galaxies