

X04a **Synthetic Metal Observations of  $z=2.0$  IGM within Osaka Feedback Model Simulations**

Jackson M. Norris (Osaka University), Kentaro Nagamine (Osaka University), Ikko Shimizu (Shikoku Gakuin University)

Ongoing observations with the Subaru Prime Focus Spectrograph (PFS) and other future large telescopes will allow investigations of the relative distribution of HI gas and metals around galaxies. We use simulations of isolated galaxies from the Osaka feedback model (Shimizu et al. 2019) to investigate the limitations of such observations. The Osaka feedback model incorporates feedback from supernovae and uses the CELib chemistry library to provide time-dependent metal enrichment of gas from Type Ia and II supernovae. This provides us with a good understanding of metal enrichment, which allows us to generate synthetic observations of the high-redshift intergalactic medium, focusing on the effects of metals. In this presentation, we will showcase early results of our analysis regarding synthetic spectroscopic observations of metal absorption lines toward background quasars and galaxies.