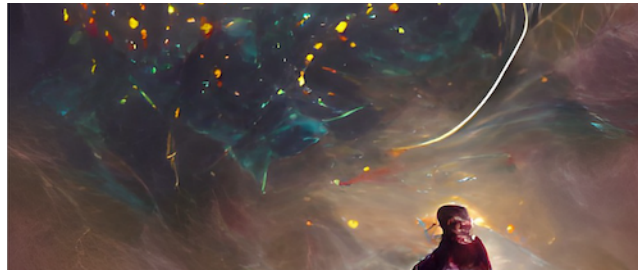


# Cosmic Cartography 2022: Exploring the Cosmic Web and Large-Scale Structure



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## The Diversity of IGM-galaxy connection among galaxies at redshift $z = 2-3$

*Monday, 7 March 2022 15:25 (30 minutes)*

The matter in the Universe is distributed like a network called the large-scale structure or the cosmic web. The observational probe of the cosmic web is the large-scale distributions of galaxies and the intergalactic medium (IGM). Because they trace the same underlying dark matter, one can expect their spatial correlation. Nonetheless, we cannot currently make their direct comparison due to the lack of either galaxy catalogs or IGM data, or both. Instead, we conducted the cross-correlation analysis and investigated the spatial connection between galaxies and the IGM. In this talk, I will present our latest results on the IGM-galaxy connection and its variety obtained from the Ly $\alpha$  forest tomography data, CLAMATO (Lee et al. 2016, 2018), and several galaxy catalogs at  $z = 2$  in the archive.

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**Session Classification:** Day 1 Afternoon