

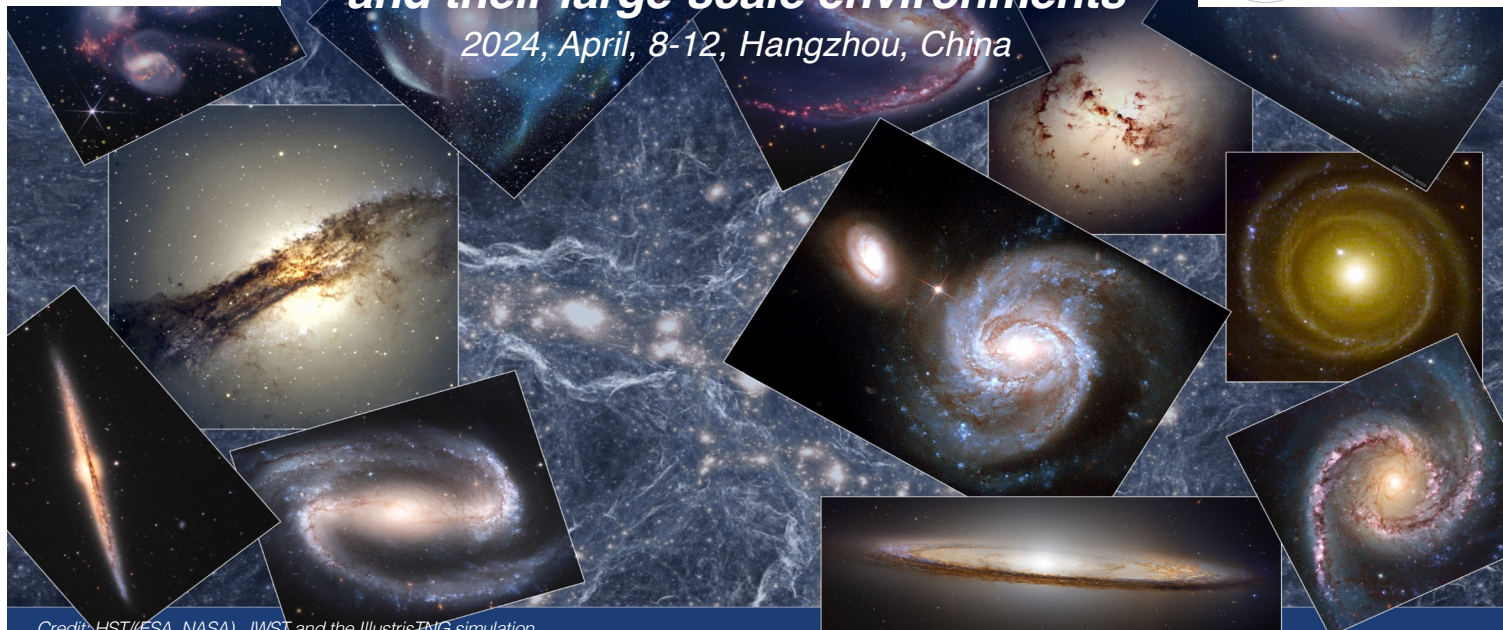


Co-evolution of galactic eco-systems and their large-scale environments

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Institute for Astronomy
The School of Physics,
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Credit: HST/(ESA, NASA), JWST and the IllustrisTNG simulation

A fundamental question in the field of galaxy formation and evolution is what ultimately decides the fate and final state of galaxies that live inside dark matter halos and co-evolve with the large-scale environment.

The goal of this scientific assembly is to make solid progress in our understanding of **close connections between galaxy properties and the large scale environment.**

Related science topics include the following aspects:

- ❖ The effects of large-scale tidal torque environment on galaxy evolution
- ❖ The role of galaxy merger and interaction on galaxy evolution
- ❖ Physics of CGM and its role in linking galaxies and their large-scale environment
- ❖ How do galaxies acquire and lose spin in dark matter, gas and stars
- ❖ How do galaxies build up and consume the cold gas reservoirs
- ❖ Connections to environmental types (knot, filament, sheet and void)
- ❖ Connections to halo assembly bias
- ❖ Connections to galaxy conformity
- ❖ Observational inferences from the CGM and galaxy surveys



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