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## Mock skies for SPHEREx auto- and cross-correlation analyses

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SPHEREx, NASA's latest space telescope (launched March 11th, 2025!), will soon begin its survey of the entire sky in 102 near-infrared spectral channels. Intensity mapping – including auto- and cross-spectrum analyses – will be focused on a  $100 \text{ deg}^2$  deep field centered on the north ecliptic pole, but shallower maps will exist over the whole sky enabling cross-correlations with surveys operating anywhere on Earth. In support of pipeline validation and the eventual interpretation of our measurements, we have developed a custom framework for generating mock extragalactic skies, including the continuum and line emission from central galaxies (star-forming and quiescent), their satellites, and diffuse intrahalo light across all of cosmic history. I will introduce our approach to modeling these various components, present basic predictions including comparisons to a lighter weight halo model, and discuss how these mocks can be used to prepare for cross-correlations between SPHEREx and other intensity mapping experiments in the next few years.

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