

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



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## How do voids influence galaxy evolution?

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In our work (arXiv:2010.03742), we investigate the influence of voids on galaxy formation. In contrast to the dense environment of galaxy clusters, a galaxy should have difficulty forming in the underdense environment of a cosmic void. The gravitational pull of the void's surroundings should weaken the matter infall onto a dark matter halo located in the void. The effect should be the strongest at the potential hill of the void, which we denote the elaphrocentre. With the aim of testing if voids are a favourable environment for the formation of giant low surface brightness galaxies (LSBGs). I'll present our fully numerical, highly reproducible approach, starting from the initial perturbations through to a galaxy population obtained using semi-analytical galaxy evolution recipes based on the merger-tree histories. We investigate the properties of void galaxies, including the matter infall rate, the size of the galaxy disks, the spin parameter and the formation epoch.

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