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HoDpipe: recreating a realistic universe

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Next generation galaxy surveys will measure the properties of our Universe with unprecedented precision. Thus, model testing and validation with numerical simulations is crucial to obtain accurate and unbiased estimates of the cosmological parameters. These mocks must faithfully reproduce the measurable properties of the galaxy population that will be observed.

In this talk, I will present HoDpipe, a new tool able to generate quick galaxy mocks replicating a number of properties given as inputs.

HoDpipe is flexible: it implements different Halo Occupation Distribution (HOD) models, halo profiles, can handle both assembly and velocity biases and can predict galaxy and clustering properties, redshift distributions and correlation functions.

HoDpipe can be used to generate galaxy mocks to test theoretical models, as a benchmark for analytical covariance calculations and as a validation tool for approximate methods.

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