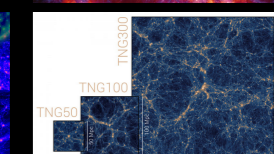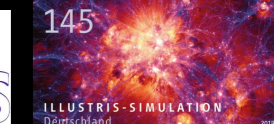# TAKING HOD MODELING TO THE NEXT LEVEL: RESULTS FROM SDSS AND TESTS WITH HYDRODYNAMIC SIMULATIONS

GILLIAN D. BELTZ–MOHRMANN[1], ADAM O. SZEWCIW[1], ANDREAS A. BERLIND[1]
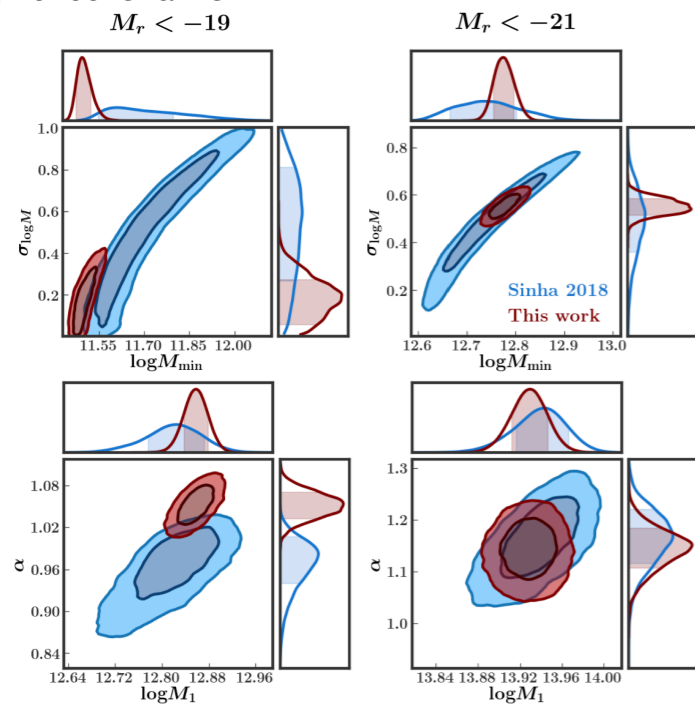
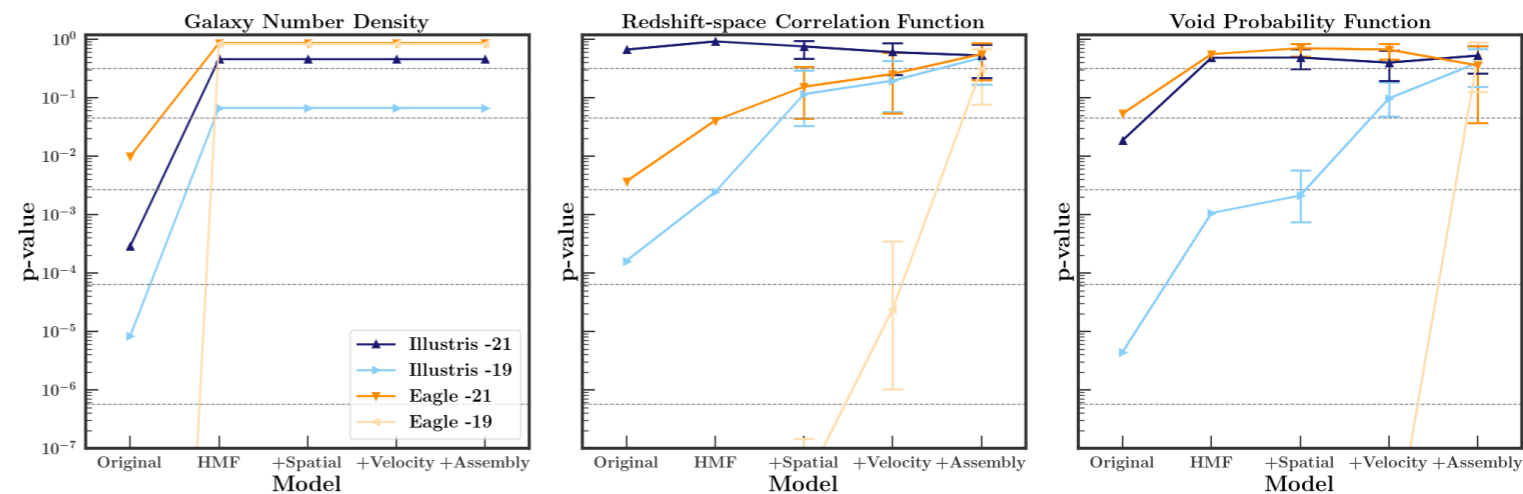[1]VANDERBILT UNIVERSITY

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RESULTS FROM SDSS

1 **Szewciw, et al. (in prep):** More clustering statistics leads to tighter constraints.

4 **Szewciw, et al. (in prep):** HOD parameter constraints change depending on how the halo masses are corrected.

TESTS WITH HYDRODYNAMIC SIMULATIONS

2 **Beltz-Mohrmann, et al. (submitted to MNRAS):** p-values for different clustering measurements on **Illustris** and **EAGLE** galaxies, after different modifications to the halo model and simulations.
Illustris and **EAGLE** are very different. Faint galaxies are more affected by spatial, velocity, and assembly bias.
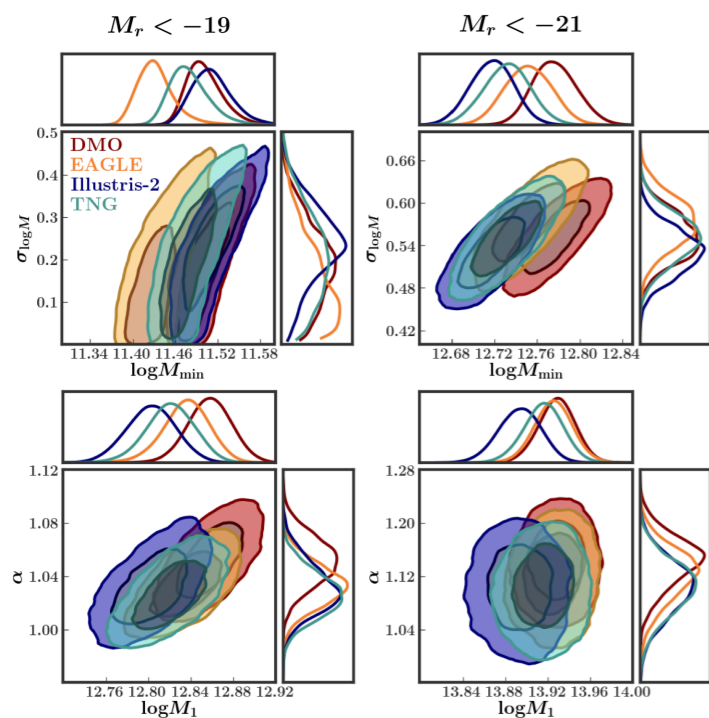
3 **Beltz-Mohrmann, et al. (in prep):** halo mass ratios in hydro vs. DMO in **Illustris**, **EAGLE**, and **TNG**