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Breaking Degeneracies between Quasar Halo Occupation Distribution Models :Extending Direct Measurements to Redshift 0.6[1] MY NGUYEN, University of Wyoming, SUCHETANA CHATTERJEE, Presidency University, Kolkata, ADAM MYERS, University of Wyoming, ZHENG ZHENG, University of Utah, EDUARDO ROZO, ELI RYKOFF, Stanford University — Recent work on quasar clustering suggests a degeneracy in the halo occupation distribution (HOD) constrained from two-point correlation function. To break this degeneracy, we made a direct measurement of the mean occupation function (MOF) at redshift $z \sim 0.2$ from cross-matching SDSS DR7 quasars with galaxy clusters drawn from the MaxBCG catalog. A limitation of our measurement is that $z \sim 0.2$ appears to be too shallow for good statistics. To circumvent this limitation, we repeat our measurement using clusters drawn from the RedMapper catalog. The number of matched quasars increases significantly in this new analysis, as RedMapper clusters probe as high as $z \sim 0.6$. Preliminary results show that the MOF increases monotonically with halo mass. The variance of the HOD closely resembles a Poisson distribution. The radial distribution of quasars within dark matter halos is described by a power law with a slope of ~ -1. The conditional luminosity function (CLF) and conditional black hole mass function (CMF) of quasars show no evidence of evolution with host halo mass, similar to inferences drawn from measurements of the two-point correlation function.

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My Nguyen
University of Wyoming

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