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Information content in the redshift-space galaxy power spectrum and bispectrum NISHANT AGARWAL, University of Massachusetts Lowell, VINCENT DESJACQUES, Technion, Israel, DONGHUI JEONG, The Pennsylvania State University, FABIAN SCHMIDT, Max Planck Institute for Astrophysics — The small-scale distribution of matter is a sensitive probe of various cosmological parameters. Extracting unbiased constraints from these scales, however, requires careful consideration of nonlinear gravitational evolution, nonlinear biasing, and line-of-sight dependent selection effects. I will present a Fisher information study of the statistical impact of galaxy bias and selection effects on the estimation of key cosmological parameters from galaxy redshift surveys; in particular, the angular diameter distance, Hubble parameter, and linear growth rate at a given redshift, cold dark matter density, and tilt and running of the primordial power spectrum. I will show that including the one-loop galaxy power spectrum and tree-level bispectrum helps break various parameter degeneracies and recovers cosmological information that would otherwise be lost in modeling the observed distribution of matter on small scales.

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