

## The Effect of Baryons on Cosmic Structures

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**S. Kazantzidis**

*Department of Astronomy and Astrophysics, Kavli Institute for  
Cosmological Physics, The University of Chicago (KICP, U. Chicago);  
Institute for Theoretical Physics, U. Zürich*

The effect of baryons on cosmic structures is investigated combining high-resolution controlled N-body experiments with cosmological gasdynamical simulations of galaxies and clusters in the  $\Lambda$ CDM cosmology. In particular, I will discuss the vital role of baryons for crucial issues including the fate of supermassive black holes and the evolution of the M- $\sigma$  relation in galaxy mergers, the structural evolution of substructure in cold dark matter models, and the shapes of dark matter halos.

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