

Halo Formation along the “Dark” Cosmic Time

Carlo Giocoli
Università di Bologna

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Abstract

Using results from Λ CDM numerical simulations I will discuss how extended-Press and Schechter formalism can be improved, within the context of the ellipsoidal collapse, to describe halo formation and creation. I will then focus on how it is possible to develop a simple model for estimating the mass growth histories of dark matter haloes fitting the generalized formation time distribution. An extension of this formalism, to predict structural halo properties in non-standard simulations of structure formation, will also be treated shedding light on the possibility to use structural halo properties as a possible cosmological probe.