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国台学术报告 NAOC COLLOQUIUM

2016 年 第 28 次 / No. 28 2016

Time: Wed. 2:30 PM, Sep. 21 Location: A601 NAOC

Semi-analytical modelling of galaxy formation:

results from a new multi-wavelength model

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Prof. Cedric Lacey received PhD from Institute of Astronomy in Cambridge. He subsequently worked as postdoc in Princeton, Harvard and Berkeley, respectively. He then worked as research fellow at Oxford, and joined Copenhagen as associate professor. In 2002, he joined Institute for Computational Cosmology in Durham University as professor. He worked mainly on theoretical models of galaxy formation, including merger histories of dark matter halos, and semi-analytical modelling of galaxy formation.

Abstract

Galaxy formation depends on a complex interplay of different physical processes. While the evolution of the dark matter is fairly well understood, there are many uncertainties in the physics of the baryonic component. Progress in our understanding requires constructing physical models that incorporate all of these processes, and testing them against the widest range of observational data. The first part of this talk will describe the semi-analytical approach to modelling of galaxy formation, and discuss why it is still useful. The second part presents results from a new version of the GALFORM semi-analytical model (Lacey et al 2016) that predicts observable galaxy properties from UV to sub-mm wavelengths, and incorporates a varying initial mass function (IMF). I will discuss the constraints that this work places on physical processes such as feedback from supernovae and AGN, and the formation of galaxy spheroids by galaxy mergers and disk instabilities, as well as on variations in the IMF.

All are welcome! Tea, coffee, biscuits will be served at 2:15 PM.