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国台学术报告 NAOC COLLOQUIUM

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Time: Wednesday 2:30 PM, Oct.21th Location: A601, NAOC

Dark matter halos from inside out: the dynamical state, distribution and boundary of halos

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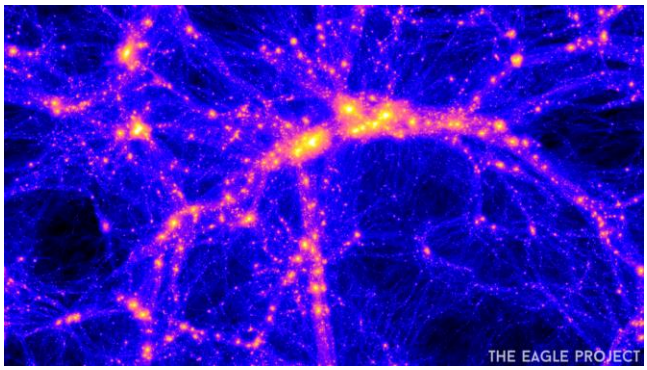
Jiaxin Han got his PhD from Shanghai Astronomical Observatory in 2013 and subsequently worked as postdocs at the Institute for Computational Cosmology (Durham University, UK) and the Kavli Institute for the Physics and Mathematics of the Universe (IPMU, Tokyo University), before joining Shanghai Jiao Tong University in 2018 as a tenure-track associate professor. His research is focused on astrophysical studies of the property and distribution of dark matter through various theoretical and observational approaches. He has been supported by the Marie-Curie foundation (EU), JSPS (Japan) and the national talent recruitment program.

Abstract



Dark matter halos are approximately virialized condensations of dark matter that serve as building blocks of the large scale structure and the birthplaces for galaxy formation. These structures are not fully in equilibrium and contain large amounts of substructures including subhalos and streams. They are also constantly accreting material from the neighbourhood, creating an ambiguous boundary around each halo and leading to a complex interplay between various halo properties and the environment. Although halos can easily identified in numerical simulations, our understanding of many fundamental properties of halos still has a long way to go, including the definition of halo size.

In this talk, I will introduce our recent efforts in understanding dark matter halos from small to large scale, covering their dynamical state, boundary characterisation as well as largescale distribution. These results are mostly from numerical simulations but has important observational applications, for example in quantifying the size of our Milky Way halo.

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