

Seminar

by

Ryan Leaman

MPIA Heidelberg

Monday, 13. May 2019, at 15:00 Uhr in HS

Department of Astrophysics, Türkenschanzstraße 17, 1180 Wien

New methods for recovering galaxy merger histories and what they tell us about the nature of dark matter

Galaxy mergers impart strong changes to the structure, dark matter content and stellar populations of galaxies - however it is difficult from observations to know how many of these events a present day galaxy has undergone. In this talk I will illustrate new techniques for quantifying the invisible past merger history of a galaxy: from their star cluster populations, from spectroscopic decomposition of their stellar halo light, and from dynamical models. Importantly the three methods can be tested against each other for a single galaxy, and I will discuss how this may provide a promising new way to test whether cold dark matter with baryonic feedback is a sufficient framework for galaxy evolution, or whether self-interacting or Bose-Einstein condensate dark matter models may be favoured.