

**Preisträgervortrag** PV V Mi 12:10 Oper  
**Dark Matters** — ●SIMON WHITE — Max Planck Institute for Astrophysics, Garching, Germany — Träger des Max-Born-Preises

Dark matter appears to dominate the matter content of our Universe and to have driven the formation of all structure within it. Although the nature of dark matter remains unknown, it is plausibly a new type of neutral elementary particle, perhaps a neutralino. Astronomical data constrain the spatial distribution of the dark matter, both

at the recombination epoch ( $t=380,000$  yr) and today ( $t=13.7$  Gyr). In the present Universe, gravitationally bound dark matter halos are the basic units of nonlinear structure, and galaxies have condensed at their centres. I will show how these halos have grown out of the near-uniform matter distribution present at early times, and I will explore how the growth process is reflected in their current structure. In particular, I will discuss how the fine-scale structure of dark halos affects attempts to detect the dark matter directly in terrestrial laboratories or indirectly through its annihilation radiation.