NRAO/Socorro Colloquium Series

Rachel Somerville

Rutgers

Physical Models of Galaxy Formation in a Cosmological Framework: a Status Report

Abstract:

Galaxies mark the nexus between the "micro" scales of individual stars and black holes, and the "macro" scales of the "cosmic web", the large scale structure in which galaxies are embedded. Modeling the physics of galaxy formation is therefore one of the greatest challenges in astrophysics today because of the enormous range of scales involved and the diversity of physical processes that are important. However, models have made enormous progress in the past few years towards explaining a variety of observations and identifying a set of essential physical processes that shape the observable properties of galaxies. I will review the successes and some of the failures of state-of-the-art cosmological models of galaxy formation when confronted with an array of observations and discuss what we have learned from these results about the physics that drive galaxy evolution. I will also present some recent work on modeling the properties of atomic and molecular gas in galaxies over a broad range of cosmic history.

May 22, 2015

11:00 am

Array Operations Center Auditorium

All NRAO employees are invited to attend via video, available in Charlottesville Auditorium, Green Bank Auditorium, and VLA Video Conference Room.

Local Host: Emmanuel Momjian