



DEPARTMENT OF PHYSICS AND ASTRONOMY

COLLOQUIUM **IN-PERSON ONLY EVENT**



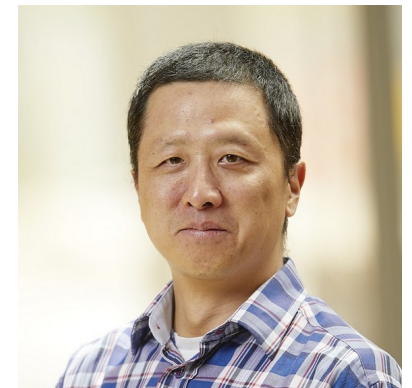
From Pebbles to Planets: Planetesimal Formation and Pebble Accretion

Chao-Chin Yang

Department of Physics & Astronomy
The University of Alabama

Despite the thousands of extrasolar planetary systems already detected, indicating the ubiquity of planets around stars, a comprehensive picture of how planets are formed from their natal protoplanetary disks remains to be drawn. From interstellar μm -sized dust grains to newborn planets, planet formation covers 30 orders of magnitude in mass and 13 orders of magnitude in size. Moreover, planet formation involves complicated interactions between the solid materials, the gaseous medium, the stellar irradiation, and the magnetic fields.

I will review our current understanding of the dust-gas dynamics in protoplanetary disks and its consequences on the formation of planets via the core accretion scenario. Specifically, I will examine how and under what conditions cm/mm-sized dust pebbles can actively concentrate themselves to high density for km-sized planetesimals to form, the initial mass function of planetesimals, and how pebble accretion assists planet formation, along with some supporting observational evidence.



Thursday, October 29, 3:00–4:00 PM

IN-PERSON EVENT PHYSICS BUILDING, ROOM 202

Local Contact: Dr. Cassandra Hall, cassandra.hall@uga.edu