

第31回 RESCEU コロキウム



東京大学大学院理学系研究科 附属ビッグバン宇宙国際研究センター

日 時: 2018年10月25日(木) 13:30 ~ 14:30

場 所: 理学部4号館1階ピロティ RESCEU セミナー室

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Does disk fragmentation by gravitational instability explain formation of the wide orbit planets?

In this talk, I will discuss planet formation via gravitational fragmentation of protoplanetary disk. Recent ALMA observations have found gaps at several tens of AU in protoplanetary disks (e.g., ALMA Partnership 15, Tsukagoshi+16) which are often regarded as a sign of planet formation in the disks (Dipiero+15, Kanagawa+16). Furthermore, gaseous planets with semi-major axis of several tens AU have been found by direct observations (e.g., HR 8799; Marois+08, GJ504; Kuzuhara+13). However, standard planet formation scenario i.e., core accretion scenario has difficulty to explain such wide-orbit planets.

Disk fragmentation by gravitational instability is an alternative and plausible mechanism for formation scenario of planets at several tens of AU because it tends to happen in outer part of disk. In this talk, I will discuss the criterion of disk fragmentation and property of the fragments formed in the protoplanetary disks. Then, I will discuss whether disk fragmentation can be a preferred mechanism to explain the wide-orbit planets or gaps in the disk.

興味をお持ちの方の聴講を歓迎致します。お茶とお菓子を用意しております。