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Implications of dead zones for planet formation

Thursday 7 August 2014 14:00 (30 minutes)

Simple dynamical models for planet formation start from initial conditions in which planetesimals form across a broad range of radii in a smooth gas disk. Such conditions are hard to reconcile with current thinking, which emphasizes the primacy of aerodynamic drift, dead zones, and planetesimal formation via the streaming instability. I will discuss the possibility that most planet formation is seeded at particle traps, situated at radii where the physical conditions in the disk change abruptly. Such a model has some theoretical appeal, and I will discuss whether it could be consistent with Solar System and extrasolar planet observations.

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