

Planetesimal size and protoplanetary disk turbulence

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When the random velocities of bodies are greater than their surface escape velocities, the runaway growth of bodies occurs, which produces a single large bodies surrounded by leftover bodies in each annual of a protoplanetary disk. The slope of the size distribution of bodies becomes steeper through runaway growth. The slope of runaway growth is seen in the size distribution of 100km sized or larger bodies in the main belt. Since the random velocities rises by turbulent stirring in the disk, the planetesimal size above which runaway growth occurs is determined by the strength of turbulence. We discuss turbulence strength in the solar nebula.

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