

## Angular momentum transfer and evolution of protolunar disk

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The most prevailing hypothesis of the origin of the Moon is the giant impact hypothesis. It claims that a Mars-sized protoplanet collided with the proto-Earth and the mantle material of the impactor was flung around, forming a circumterrestrial disk, and the Moon was formed from this protolunar planet. In this study, we investigate the details of angular momentum transfer in the protolunar disk, which is due to self-gravity, collisions of particles, and movement of particles. We study the effect of particle number and its size on each process especially. We find that the angular momentum transfer by self gravity is most important for time scale of lunar formation. We conclude that the result of rapid formation of the Moon with limited numbered N-body simulation is valid.