

Accretion disks onto protoplanets in protoplanetary disks

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We investigated accretion-flow structures and accretion rates onto planets in protoplanetary disks in order to make the planet evolution on the gas accretion phase clear with two-dimensional hydrodynamical simulation. It was found that a disk is formed in the gravity sphere of the planet when protoplanetary-disk gas accrete onto the planet, and that the growth time scale of the planet is about 500 year if planetary mass is present Jupiter one. I will report the possibility of planetary migration by gravitational interaction between the protoplanetary disk and the planet with circumplanetary disk, which has two spiral shocks.