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PPS01-P07 Room:Convention Hall Time:May 26 18:15-19:30

Can gap suppress gas capturing growth of giant planets?

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We study the final masses of giant planets growing in a protoplanetary disk by using a toy model, which employs simulation-based two empirical formulae for gap depth and accretion rate of area of protoplanetary disks. This model enables us to calculate time evolution of mass of giant planets. We find that gap opening is not effective to suppress gas capturing growth of giant planets: a Jupiter-mass planet is easily formed in a disk with small viscosity (alpha is 10^{-3}) and a small disk surface density (~1/10 of the minimum mass solar nebula model). Hot jupiters, which are thought to be formed outer region and then move inward by type II migration, could be formed in-situ (at 0.1 AU for example).

Keywords: gap, protoplanetary disk, giant planet