From Protoplanets to Terrestrial Planets

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We investigate the formation process of terrestrial planets from protoplanets by using N-body simulations. As the initial conditions we

adopt the oligarchic growth model of protoplanets. We derive the statistical properties of the assembled terrestrial planets from the results of about 100 runs. We show the dependence of the mass and orbital properties of the terrestrial planets on the mass and

distribution of the initial protoplanets.

The number of planets decreases with the total mass of the initial protoplanets, while the mass of the individual planet increases. The basic structure of planetary systems hardly depends on the initial distribution of protoplanets as long as the total mass is fixed. The formation probability of habitable planets is also discussed.