

Orbital Architecture of Planetary Systems Formed by Giant Impacts

*Eiichiro Kokubo¹

1. Division of Theoretical Astronomy, National Astronomical Observatory of Japan

In the standard scenario, the final stage of terrestrial planet formation is giant impacts among protoplanets. In this stage protoplanets gravitationally scatter each other and collide until the system reaches a stable configuration. We investigate the final orbital architecture of planetary systems realized by this process by N -body simulation. We find that the ratio between the physical and Hill radii of protoplanets determines the system architecture and it becomes compact and dynamically cold as the ratio increases. We also compare the results with the orbital architecture of exoplanetary systems.

Keywords: terrestrial planets, giant impacts