High-resolution *N*-body simulations using Pezy-SC processor

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We developed an *N*-body simulation code on multiple Pezy-SC processors—Pezy-SC processor is a novel new architecture developed by Pezy Computing K. K. that has achieved large computational power with low electric power consumption. We adopt the rubble pile model for physical collisions, in which no mergers are allowed, and use FDPS (Framework for Developing Particle Simulator) to solve the self-gravity. We performed several sets of high- and extra-high-resolution *N* body simulations of the lunar accretion from a circumterrestrial disk of debris generated by a giant impact on Earth. The number of particles is up to 1 million, in which 1 particle corresponds to a 30 km-size satellitesimal. We show the performance and capability of our numerical code for high-resolution *N*-body simulations of planet/moon/ring formation.

Keywords: N body simulation, moon formation, Pezy-SC