
[JJ] Evening Poster | P (Space and Planetary Sciences) | P-PS Planetary Sciences

[P-PS08]Planetary Sciences

convener: Takaya Okamoto (Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency), Kenji Kurosaki (Department of Physics, Nagoya University)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

We call for general interest papers for Planetary Sciences. Planetary Sciences consist of a variety of studies on the past, present, and future of our solar system and exoplanetary systems. Discussions based on various backgrounds are encouraged.

[PPS08-P19]Thermal Stress acting on Saturn's ring particles and boulders on icy satellites.

*Naoyuki Hirata¹, Keiji Ohtsuki¹ (1.Kobe University)

Keywords: Thermal stress, Icy satellites, Saturn's Ring

We investigate the thermal stress acting on icy particles of Saturn and boulders on icy satellites. As a result, we find that the stress induced by diurnal or seasonal temperature variation is sufficient to cause failure of icy rigid particles with 1m to 1km. In terms of size evolution of ring particles, the thermal stress would be key physical parameters. Also, this implies that the lifetime of icy boulders on satellites is quite short, which is consistent with the fact that boulders are visible on the geological active province of Enceladus but invisible on the other icy satellites. In the future mission, the existence of boulders on icy satellites such as Europa would imply its recent activity.