

## Numerical simulation of Saturn ring formation using SPH

\*keiya murashima<sup>2</sup>, Natsuki Hosono<sup>1</sup>, Yosuke Yamashiki<sup>1</sup>

1. Global Water Resources Assessment Laboratory - Yamashiki Laboratory Graduate School of Advanced Integrated Studies in Human Survivability Kyoto University, 2. Faculty of Science, Kyoto University

The origin of Ring formation of Saturn is well explained by Ripped-apart icy moon hypothesis proposed by Canup et al., in which Saturn's planetary tidal forces preferentially strip material from the Titan-sized icy moon's outer icy layers, while its rocky core remains intact and is lost to collision with the planet. We performed numerical simulations using SPH and surveyed the effect of the initial conditions and dependence of the number of particles to the results. We will show the the result of numerical simulations which includes the material strength.

Keywords: Ripped-apart icy moon, SPH, propeller structure