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Title: *“Influence of center of mass variations on Cassini states in the spin-orbit problem”*

Abstract. We investigate the role of center of mass variations of a celestial body, that is situated in spin-orbit resonance, on its rotational parameters. We find that the deviation of the center of mass from the geometrical figure of an asteroid, moon or a planet strongly influences the geometry of the phase space structure close to so-called Cassini states. We apply our theory to the case of binary asteroid 65803 Didymos and investigate the dynamical problem in presence of more generic $p : q$ spin-orbit resonances. Our results are based on analytical estimates and numerical simulations.