1 Abstract

The thesis concerns with icy moons and the computation of the heat production which is generated by the effect of tidal forces. The text primarily focuses on the behaviour of viscosity in the ice shell for variable ice shell thickness. Viscosity decreases exponentially as the temperature of ice increases. We also study the viscosity and heat dependence on the size of an ice grain in range of 10^{-5} m - 10^{-1} m and the amount of stress in range of 10^{3} Pa - 10^{7} Pa. Computation was realized using a provided program and the results of all models are represented in form of a heat map and further studied. Primarily we discuss the heat balance of the moon Europa and Enceladus.