

SPH Numerical simulation: Effect of mare loading on the evolution of lunar basins

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2D elastic SPH numerical simulations are conducted to quantify the evolution of mare basins on the moon. Mare load results in bending of the elastic lithosphere. The stress field and the subsidence of the elastic lithosphere are estimated in the region of Grimaldi basin. Our results indicate that gravens are formed by the extensional stress. It is also possible to estimate the thickness of the lithosphere at the time of graven's formation.