

Modeling of the physical selenocentric surface using modern satellite observations and harmonic analysis methods

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Abstract

© Published under licence by IOP Publishing Ltd. On the basis of satellite observations taken during "Apollo", "Clementine", "Kaguya", "LRO", "GRAIL", and "SMART-1" space missions a model of lunar physical surface of 18th order of expansion into a series of harmonic coefficients was constructed. In order to expand the data on relief into spherical functions a step-by-step regression was applied. All the constructed models included only significant elements. The regression analysis of the models of lunar relief for various expansion orders was carried out; as a result, it was determined that increase in order of expansion did not play a prominent role from a certain stage. The influence of model's overdetermined structure on values of the parameters determined was also investigated.

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