Realization of different height systems based on the solution of fixed boundary value problem

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Essentially, different height systems are defined based on the geopotential numbers. In this research, we propose a new method for computation of geopotential numbers based on the solution of geodetic boundary value problem. A fixed boundary value problem has been solved for determination of potential at the Earth surface. Knowing potential values at the Earth surface, we can compute geopotential numbers at the Earth surface. Different height systems are realized based on these geopotential numbers. The method has been successfully tested for computation of height systems at central part of Iran.