

THE FORM OF THE GRAVITATIONAL POTENTIAL IN FLAT, OPEN AND CLOSED UNIVERSES

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Within the cosmic screening approach, we obtain the exact formulas for the velocity-independent gravitational potentials produced by matter in the form of discrete sources distributed in the flat, open and closed Universes.

These formulas demonstrate that spatial curvature of the Universe considerably affect the form of the potentials and forces. While in the flat and open Universes the gravitational force undergoes exponential suppression at cosmological distances, in the closed Universe the force induced by an individual mass is equal to zero at the antipodal point with respect to this mass.