

MP 9: Gravitation

Zeit: Mittwoch 9:40–10:05

Raum: ZHG 003

MP 9.1 Mi 9:40 ZHG 003

The variant of post-Newtonian mechanics with generalized fractional derivatives — •VLADIMIR KOBELEV — Fakultät IV: Naturwissenschaftlich-Technische Fakultät, Universität Siegen, 57076 Siegen

We investigate mathematically the variant of post-Newtonian mechan-

ics using generalized fractional derivatives. The relativistic-covariant generalization of the classical equations for weak gravitational field is studied. The equations (i) match the weak Newtonian limit on the moderate scales and (ii) deliver a potential distinct from the Newtonian on certain large-distance characteristic scales. The exact expression for fundamental solution is found. With the fundamental solution closed analytical form for virial theorem is stated.