Abstract

We present an elementary deduction of the Newtonian force from Kepler's laws. We relate it to a generalization by Jacobi of the Keplerian motion, where the Euclidean form in the plane is replaced by some function with the same homogeneity. We show how several convexity properties of the generalized Keplerian orbits appear in this context. We describe the generalized hodographs.

Reference: http://arxiv.org/abs/2506.00086