

## Abstract

We extend the classical Newtonian equations of the  $n$ -body problem to spaces of constant curvature and describe some properties of the solutions. We are especially interested in relative equilibria, which are orbits for which the mutual distances between bodies remain constant along the motion. We will also explain why these equations may help us decide whether the universe is flat or curved. The knowledge needed to understand this talk is that of a first course in differential equations.