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Relative equilibria of the curved N-body problem

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We generalize the Newtonian N-body problem to spaces of constant curvature, as done in [1], and study its relative equilibria, i.e. orbits that maintain constant mutual distances during the motion [2,3,4,5]. We provide a complete description of these solutions, prove criteria for finding them, and present several examples for various values of N. Finally we introduce the concept of central configuration and show how it can simplify the study of relative equilibria. The core of the talk is paper [5], for which the author was awarded the J.D. Crawford Prize from SIAM in 2015.

References

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