



# INSTITUTE SEMINAR

20<sup>TH</sup> DECEMBER, 2017 | 10:00AM | FERMION HALL



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## TITLE

**The classical n-body problem in the context of curved space**

## ABSTRACT

We consider the classical n-body problem of celestial mechanics and show how the equations of motion can be extended to spaces of constant curvature, in particular to the unit 3-sphere and the unit hyperbolic 3-sphere. Then we study relative equilibrium solutions and provide complete results on their qualitative behaviour. To understand these results, we also make a brief introduction to some concepts of geometric topology. In the end, we show how the equations, their integrals of motion, and some solutions bifurcate when passing from non-zero curved space to flat space.