

## THE 2-BODY PROBLEM IN 2+1 SPACETIME DIMENSIONS

In 2+1 spacetime dimensions with negative cosmological constant, black holes and point particles can be obtained as identifications of the 2+1 anti-de Sitter (adS) spacetime under a discrete isometry: the Bañados-Teitelboim-Zanelli (BTZ) solutions. Moreover, the metric outside any finite-sized matter configuration is also BTZ, determined only by its mass and spin. Hence in principle the  $n$ -body problem can be solved by cutting and pasting adS spacetime. Building on work of Deser-Jackiw-t'Hooft, Brill, Steif, Matschull and others from the mid-90s, I am working towards a complete solution of the 2-body problem.