Abstract

General relativity is invariant under diffeomorphisms, and excitations of the metric corresponding to diffeomorphisms are nonphysical. In the presence of a boundary, though -- including a boundary at infinity -- the Einstein-Hilbert action with suitable boundary terms is no longer fully invariant, and certain diffeomorphisms are promoted to physical degrees of freedom, with a boundary action induced from the bulk action. I will describe how this works in (2+1)-dimensional AdS gravity, and discuss work in progress on the asymptotically flat case, for which the boundary action is related to Hill's equation.