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Simulations of BH Collisions in AdS5

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In the context of gauge/gravity duality, it has been suggested that the far-from equilibrium strongly coupled dynamics encountered in ultrarelativistic heavy-ion collisions may be modeled as the collisions of black holes in asymptotic anti-de-Sitter spacetimes. I will present results from the evolution of spacetimes that describe the merger of asymptotically global AdS black holes in 5D with an $SO(3)$ symmetry. The initial trapped regions are sourced by scalar field collapse and we are able to evolve through the ensuing black hole merger as well as subsequent ring-down. The boundary stress tensor corresponding to this evolution is found to correspond to hydrodynamics at late times, but not at early times. Implications and generalizations of this work and signatures that could be relevant to experimental observations at RHIC and the LHC will be discussed.

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