



Universidad del País Vasco
Euskal Herriko Unibertsitatea
The University of the Basque Country

Seminarios de Física Teórica
Fisika Teorikoa: Hitzaldiak

Gravitational turbulent instability of Anti-de Sitter spacetime

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Abstract Anti-de Sitter (AdS) spacetime is linearly stable, but non-linearly unstable to what we call the turbulent instability. Regardless of how weak the initial scalar or gravitational perturbation of AdS is, this instability forces the system to transfer energy from low to high frequency modes. This energy cascade is similar to what happens with the familiar process of turbulence. In a full time evolution, the scalar instability leads to the formation of a black hole and a similar endpoint is conjectured for the turbulent gravitational instability. In the context of the gravity/gauge theory correspondence, this gravitational instability of AdS provides a holographic description of quantum turbulence in the dual field theory.

Seminar Room, Dept. of Theoretical Physics, Corridor 4.-2.

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