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Quasi-Normal Modes of JMaRT: Charge Instability

Friday, 23 February 2024 12:00 (15 minutes)

We consider linear scalar perturbartions of JMaRT geometries in type IIB supergravity beyond the near-decoupling limit. In addition to confirm that these solutions suffers of instability for the presence of an ergoregion without horizon, we also find quasi-normal modes (QNMs) with positive imaginary part that can be interpreted in terms of the emission of charged (scalar) quanta with non zero KK momentum. This is a signal that JMaRT solutions suffers also of a charge instability. Using both the correspondence between gravitational perturbations and quantum Seiberg-Witten curves of N=2 Super Yang-Mills with gauge group SU(2) and Nf = (0;2) flavours and numerical integration methods we find 'charged' unstable QNMs. The endpoint of these instabilities can be a supersymmetric (BPS) configuration.

Presenter: DI BENEDETTO, Carlo (Università di Tor Vergata)

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