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## **(G\*) Probing BTZ Black Hole via Fisher Information**

*Monday, 6 June 2022 14:30 (15 minutes)*

Relativistic quantum metrology is a framework that not only accounts for both relativistic and quantum effects when performing measurements and estimations, but further improves upon classical estimation protocols by exploiting quantum relativistic properties of a given system.

Here I present results of the first investigation of the Fisher information associated with a black hole. I review recent work in relativistic quantum metrology that examined Fisher information for estimating thermal parameters in (3+1)-dimensional de Sitter and Anti-de Sitter (AdS) spacetimes. Treating Unruh-DeWitt detectors coupled to a massless scalar field as probes in an open quantum systems framework, I extend these recent results to (2+1)-dimensional AdS and black hole spacetimes. While the results for AdS are analogous to those in one higher dimension, we observe new non-linear results arising from the BTZ mass.

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