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(G*) Rotational Effects on Fisher Information of Thermal Black Hole Parameter

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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 recent developments in the Fisher information analysis associated with black hole spacetimes. I review recent work in relativistic quantum metrology that examined Fisher information for estimating thermal parameters in (2+1)-dimensional AdS and the static BTZ black hole 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 the (2+1)-dimensional rotating black hole spacetime. We find that varying the angular momentum of the BTZ black hole leads to dramatic change in the Fisher information provided the appropriate black hole and detector parameters.

Keyword-1

RelativisticQuantumInformation

Keyword-2

Black Hole

Keyword-3

QFT in Curved Spacetime

Primary author: PATTERSON, Everett (University of Waterloo)

Co-author: MANN, Robert

Presenter: PATTERSON, Everett (University of Waterloo)

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