Contribution ID: **15** Type: **Oral**

EIGENVALUE SPECTRUM OF STABILITY OPERATORS FOR MARGINALLY OUTER TRAPPED SURFACES IN WEYL-DISTORTED SCHWARZSCHILD BLACKHOLES

Tuesday 18 June 2024 11:30 (30 minutes)

Abstract:
Marginally outer trapped surfaces (MOTS) are surfaces from which outgoing light rays neither converge nor diverge. In recent years they have been found to be a key tool for understanding black hole geometries. In particular, the stability operator provides information as to whether the MOTS bounds a trapped region. This study investigates the eigenvalue problem associated with the stability operator for MOTS in the context of Weyl-distorted Schwarzschild solutions. By solving the eigenvalue problem, we aim to understand whether these solutions can always be understood as black holes

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Session Classification: Session 1.2