Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **3687** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) A five dimensional distorted black hole with a "bubble".

Monday 19 June 2023 16:45 (15 minutes)

In general, black holes interact with external matter and fields. A four-dimensional static black hole within a static external axisymmetric gravitational field can be described by a Weyl solution of the Einstein equations. These results can be extended to higher dimensions using the generalized Weyl form. Various studies have been devoted to investigate the properties of the distorted black holes so far. These include a distorted five dimensional Schwarzschild-Tangherlini black hole, a distorted five dimensional Reissner-Nordstrom black hole and a distorted black ring. In this talk, we consider five-dimensional Weyl solutions, which are characterized by two independent axially symmetric harmonic functions in three-dimensional flat space. Using this method, we investigate distortions of a vacuum five-dimensional black hole with a "bubble' (the black hole exterior has nontrivial topology).

Keyword-1

Black hole

Keyword-2

Distorted black hole

Keyword-3

Authors: KUNDURI, Hari (Memorial University of Newfoundland); BOOTH, Ivan; TAVAYEF, Matin (Memorial University of Newfoundland)

Presenter: TAVAYEF, Matin (Memorial University of Newfoundland)

Session Classification: (DTP) M3-9 Strong Gravity and Black Holes | Gravité forte et trous noirs (DPT)

Track Classification: Technical Sessions / Sessions techniques: Theoretical Physics / Physique théorique (DTP-DPT)