

Canadian Association of Physicists

Association canadienne des physiciens et physiciennes

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Type: Invited Speaker / Conférencier(ère) invité(e)

(I) Strong Gravity and the Synthesis of Heavy Elements in the Universe

Monday 6 June 2022 16:00 (30 minutes)

Gravitational-wave and multi-messenger astronomy shed light on the astrophysics of black-holes and neutronstars and also allow for unique probes of fundamental physics. I will discuss recent results on how the mergers of neutron stars and the death of massive, rotating stars give rise to the formation of heavy elements in the universe. In particular, I will discuss recent results at the interface of numerical relativity, neutrino physics, and nuclear astrophysics, and highlight how multi-messenger astronomy may lead to the answer of a 70-year old fundamental question in physics: How does the Universe create the heaviest elements?

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Session Classification: M3-4 Strong Gravity and Black Holes (DTP) | Gravité forte et trous noirs (DPT)

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