Canadian Association of Physicists

Association canadienne des physiciens et physiciennes

Contribution ID: **384** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) Effective loop quantum gravity framework for vacuum spherically symmetric space-times

Monday 7 June 2021 12:04 (3 minutes)

Guided by the application of loop quantum gravity (LQG) to cosmological space-times and techniques developed therein, I will present an effective framework for vacuum spherically symmetric space-times. Stationary solutions of the effective theory give an LQG corrected metric with a number of interesting properties including curvature scalars that are bounded by the Planck scale and a minimal (non-zero) mass for black hole formation. Finally, the vacuum solution we derive is only valid down to some minimum (non-zero) radial coordinate; this necessitates the inclusion of matter fields for a description of the full space-time and in particular address the question of singularity resolution.

Authors: KELLY, Jarod (University of New Brunswick); SANTACRUZ, Robert (University of New Brunswick); WILSON-EWING, Edward (University of New Brunswick)

Presenter: KELLY, Jarod (University of New Brunswick)

Session Classification: M1-2 Classical and Quantum Gravity I (DTP) / Gravité classique et quantique I (DPT)

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