



Contribution ID: 315

Type: **Invited talk in a parallel session**

Non-minimal coupling, negative null energy, and effective field theory

Monday, 8 July 2024 15:00 (40 minutes)

Even classical scalar fields, non-minimally coupled with the curvature, can violate energy conditions such as the null energy condition. In the context of quantum field theory, non-minimally coupled scalars can obey lower bounds, known as quantum energy inequalities, but these are always state dependent. In this talk I will discuss classical and quantum bounds on the null energy and consider possible violations. Further, I will examine the conformal transformation between Jordan and Einstein frames both classically and semiclassically. Finally, I will comment on extensions of this work and connections with self-interacting fields.

Primary author: Dr KONTOU, Eleni-Alexandra (King's College London)

Presenter: Dr KONTOU, Eleni-Alexandra (King's College London)

Session Classification: Quantum field theory in curved spacetimes and perturbative quantum gravity

Track Classification: Quantum Gravity (QG): Quantum field theory in curved spacetimes and perturbative quantum gravity