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A Farewell to Symmetries: Quasilocal Frames in General Relativity

Monday 13 June 2016 13:00 (30 minutes)

In this talk, I will give a brief introduction to rigid quasilocal frames (RQF) which have been proposed as a geometrically natural way to define spatially extended reference frames in general relativity. In particular, I will explore their usefulness as a tool for constructing completely general conservation laws that do not rely on the presence of spacetime symmetries and include both matter and gravitational contributions without the need for any ad hoc structures such as pseudotensors. In doing so, I show how the RQF approach affords a deeper understanding of the nature of gravitational fluxes via the equivalence principle and discuss more concrete potential applications.

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