



Contribution ID: 16

Type: **Oral**

Witnesses of non-classicality beyond quantum theory

Friday, 2 October 2020 14:45 (15 minutes)

I discuss general argument to show that if a physical system can mediate locally the generation of entanglement between two quantum systems, then it itself must be non-classical. Remarkably, the argument does not assume any classical or quantum formalism to describe the mediating physical system: the result follows from general information-theoretic principles, drawn from the recently proposed constructor theory of information. This argument provides the indispensable theoretical basis for recently proposed tests of non-classicality in gravity, based on witnessing gravitationally-induced entanglement in quantum probes.

Presenter: MARLETTO, Chiara (University of Oxford)

Session Classification: Invited