Contribution ID: **3226** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) Locality in quasi-Hermitian quantum theory

Wednesday 8 June 2022 11:15 (15 minutes)

Quasi-Hermitian quantum theory generalizes quantum theory while preserving unitarity and the reality of expectation values. Unitarity is defined with respect to a new inner product, associated to a positive definite operator referred to as the metric.

In general, the metric operator can be an entangled operator. Thus, it's natural to ask whether quasi-Hermitian systems with a notion of locality have nontrivial physics.

Due to entanglement, quantum theories contain correlations not present in classical systems. The value of nonlocal games is used to quantify the strength of such correlations. As an example, the Bell inequality can be realized as the classical value of the CHSH game. We demonstrate quasi-Hermiticity can not increase the value of a nonlocal game.

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Session Classification: W1-2 Quantum Theory (DTP) | Théorie quantique (DPT)

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