ICFO

SEMINAR: Compatibility of Generalized Noisy Qubit Measurements

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14:30 to 15:30
Blue Lecture Room

It is a crucial feature of quantum mechanics that not all measurements are compatible with each other. However, if measurements suffer from noise they may lose their incompatibility. Here, we consider the effect of white noise and determine the critical visibility such that all qubit measurements, i.e., all positive operator-valued measures (POVMs), become compatible, i.e., jointly measurable. In addition, we apply our methods to quantum steering and Bell nonlocality. We obtain a tight local hidden state model for two-qubit Werner states of visibility 1/2. This determines the exact steering bound for two-qubit Werner states and also provides a local hidden variable model that improves on previously known models. Interestingly, this proves that POVMs are not more powerful than projective measurements to demonstrate quantum steering for these states.

Hosted by: Prof. Dr. Antonio Acin