

CS Seminar

Quantum Information seminar series - Full characterization of square-bit theories

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NUS Singapore

Date:

November 30, 2018
Friday
2:00 pm

Venue:

Room 308
Chow Yei Ching Building
The University of Hong Kong

Abstract:

Square bits are a family of physical theories well-known for their ability to reproduce maximal space-like correlations compatible with the no-signaling principle, outperforming in this task classical and quantum theory. In this presentation, we will provide a full characterization of all the self-consistent bipartite extensions of a square bit.

We will show the existence of models that are fully compatible with classical and quantum theories at the level of space-like correlations, and thus cannot be ruled out on the basis of any of the previously considered operational principles constraining such correlations. However, we will show that such models exhibit super-quantum time-like correlations that can be ruled out by introducing the no-hypersignaling principle, a time-like "counterpart" of no-signaling.

About the Speaker:

Michele Dall'Arno received his PhD in theoretical physics from the University of Pavia, Italy, in 2012. After post-doc positions in ICFO, Barcelona, and Nagoya, Japan, he joined the Centre for Quantum Technologies, National University of Singapore, where he is a post-doctoral researcher since 2014.

All are welcome!
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