

Seminar Series on Quantum Computing

Certified randomness from single-particle entanglement

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Abstract:

Entanglement is definitely one of the most peculiar features of quantum world; besides being the source of correlations which do not have any classical counterpart, nowadays it plays a key role in many quantum information protocols. In this talk I shall focus on single-particle entanglement (SPE), a particular kind of entanglement where quantum correlations are shared between different degrees of freedom of the same particle. Even if non-locality doesn't play any role in this context, SPE can be certified via a test of quantum contextuality based on Bell inequalities violation. In addition, I shall describe how SPE can be efficiently applied to the entropy certification of a realistic Quantum Random Number Generator.

Venue: **Sala Gerace, Dipartimento di Informatica**
Time: **Friday, 10/05/2024, 16:00**

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MISSIONE 4 COMPONENTE 2, INVESTIMENTO N. 1.4
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