Quantum Computing Seminar

Nonclassical correlations as a resource for computation

By

Selman Ipek
(Bilkent)

Abstract: Computational power in MBQC resides in the correlations between measurement outcomes. Here we consider an MBQC scheme that is fully adaptive (feedforward of measurement outcomes is allowed), but where the classical side processing only performs linear operations (mod 2 arithmetic). Although such a model is not even universal for classical computation, once supplied with a nonclassical resource (e.g., quantum state, PR box, etc.), it is possible to compute nonlinear functions within this computational model, thus promoting the model to classical universality.
References: Anders/Browne (2008): arXiv:0907.5449
References: Raussendorf (2013): arXiv:0805.1002 Background material: arXiv:0712.0921

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Place: SA141 - Mathematics Seminar Room