

Non-locality and contextuality in quantum computation

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In these lectures I will review the key concepts of local and non-contextual hidden variable models, some of the classic thought experiments that demonstrate the incompatibility of quantum mechanics with these models. I will then review several recent results which have demonstrated a link between the computational power in models of quantum computation such as measurement-based quantum computation and fault tolerant quantum computing, and the incompatibility with a local and/or non-contextual hidden variable model.