

The road beyond classical

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Abstract: Since the landmark random circuit simulation experiment in 2019, we have entered the 'beyond-classical' era, where quantum computers can in principle perform calculations that classical computers cannot. However, until the advent of a fully fault-tolerant quantum device, useful beyond-classical applications remain few and far between. In this talk I will outline recent research in fault-tolerant and NISQ (noisy, intermediate-scale quantum) algorithms that has the potential to go beyond classical, and show recent experimental results building towards this aim.