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Spatial search on Johnson graphs by discrete-time quantum walk

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Abstract

This talk is based on joint work with Renato Portugal and Mohamed Sabri. Spatial search for a marked vertex by quantum walks on the Johnson graphs with diameter three was addressed by Wong (2016) for the continuous-time case, and by Xue, Ruan, and Liu (2019) for the discrete-time case, both achieving quadratic speedups. In this talk, we discuss general Johnson graphs of fixed diameter at least four. We focus mainly on the discrete-time case.