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Decoherence in the hypercube quantum walk FREDERICK STRAUCH, Williams College — A new model of decoherence in the hypercube quantum walk will be presented, in which dephasing occurs between every vertex of the hypercube. Surprisingly, in this model the hitting probability remains bounded for arbitrarily large hypercubes. This result can be obtained by a simple analytical argument, and has implications for perfect quantum state transfer in qubit networks. This argument, and related numerical and perturbative results, will be discussed.

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