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Chen Xie* (chen.xie@edu.uwaterloo.ca). *Bounds on Quantum Chromatic Number and New Nontrivial Colorings.*

Colorings and homomorphisms are central topics in graph theory. Their quantum analogues, quantum colorings and quantum homomorphisms, can be formulated with only linear algebra, and have strong connections with the classical ideas. There are no known algorithms for generating nontrivial quantum colorings, and all known examples arose from ad-hoc constructions. I will show that a number of classical bounds are also bounds to their quantum analogues, and present new examples of nontrivial quantum colorings of graphs. (Received September 25, 2018)