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Graph theory, matrix theory, and operator theory, and distinguishing quantum states via LOCC

In this talk, I'll discuss my ongoing work with collaborators on a basic topic in quantum communication theory: Given a set of known quantum states, when can two parties distinguish the states via the hybrid classical-quantum communication protocol called local (quantum) operations and classical communication (LOCC). I'll focus on the case of quantum product states, and will show how we've been able to make use of aspects of graph theory, matrix theory, and operator theory to develop techniques for distinguishing such states in the one-way LOCC framework. This talk is based on joint works with Comfort Mintah, Michael Nathanson, and Rajesh Pereira.