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Carl A. Miller* (carlmi@umich.edu), Department of Mathematics, 530 Church St., University of Michigan, Ann Arbor, MI 48109, and **Eric Chitambar**. *The geometry of multipartite quantum systems.*

A basic problem in quantum computing is to classify all possible states of a multipartite quantum system (i.e., a quantum system that is distributed between n parties). In this talk we present an approach to this problem which involves algebraic geometry. The approach is based on a correspondence between states of a 3-party system and isomorphism classes of genus-zero curves with marked points. We give some new classification results. (Received August 05, 2009)