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**Islam I Hussein\*** (ihussein@wpi.edu), 100 Institute Rd., Mechanical Engineering, Worcester, MA 01609. *Virtual Tether Satellite Systems*.

Virtual tether satellite systems is a concept where multiple satellites retain geometric configurations in space using either Coulomb or magnetic forces. In this talk, I will present an overview of recent developments in the study of the relative equilibria of two- and three-craft Coulomb and magnetic satellite systems. I will present the stability properties of these equilibria. I will show that, except for the case where a plasma environment provides a stabilizing effect against small perturbations for two-craft Coulomb systems, these equilibria are unstable. I will conclude the talk with a brief description of results on the controllability and stabilization of two- and three-craft virtual tether systems. (Received August 30, 2008)