1116-37-2592 **Skyler C. Simmons*** (simmons@mathematics.byu.edu), 275 TMCB, Brigham Young University, Provo, UT 84602. *Stability of Broucke's Isosceles Triangle Orbit.*

Broucke's Isosceles triangle configuration was among the first periodic non-collinear orbits of the Newtonian n-body problem which featured collisions between two of the bodies. In 2012, the orbit is known to be linearly stable when all masses are equal. I will present linear stability results over a wide range of mass ratios, and give a connection between this orbit and other collision-based periodic orbits. (Received September 22, 2015)