1070-37-200 **Rick Moeckel*** (rick@math.umn.edu). *Finding periodic brake orbits in the isosceles three-body problem.*

I will describe an existence proof for a simple, periodic solution of the isosceles three-body problem. In addition to being periodic, it is also a brake orbit, i.e., the initial velocities of the bodies are all zero. This seems to be the simplest known solution with these properties. The proof is based on a shooting argument in the three-dimensional energy manifold of the system. (Received February 11, 2011)