

CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES
COLLOQUIUM

Friday, March 10

3:00 – 4:00 PM

Maria Sanford, Room 101

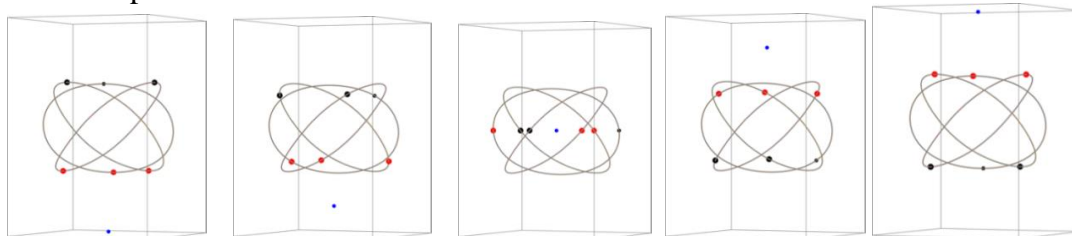
**PERIODIC OSCILLATIONS
IN THE RESTRICTED
HIP-HOP (2N+1)-BODY PROBLEM
OSCAR PERDOMO**

CENTRAL CONNECTICUT STATE UNIVERSITY

Joint work with Nelson Castaneda and Andres Rivera

Abstract: In celestial mechanics, one of the mathematical models used to describe the motions of comets, spacecrafts, and asteroids is the classical restricted $(n+1)$ -body problem. Here the motion of one body with a small mass, usually called the plus one body, is affected only by the gravitational forces of the n -bodies and, it is assumed that these n -bodies are not affected by the gravitational force of the plus body.

In this talk we will use basic calculus and topological methods to show the existence of periodic solutions of the restricted $(2N+1)$ -body problem. For these periodic solutions, the plus body move back and forth on a line, while the $2N$ -bodies move in such a way that at every instance, they form an antiprism.



To join us online use the following link: <https://ccsu.webex.com/meet/gotchey>

For further information: gotchevi@ccsu.edu; 860-832-2839;

<http://mathcolloquium.sites.ccsu.edu/>