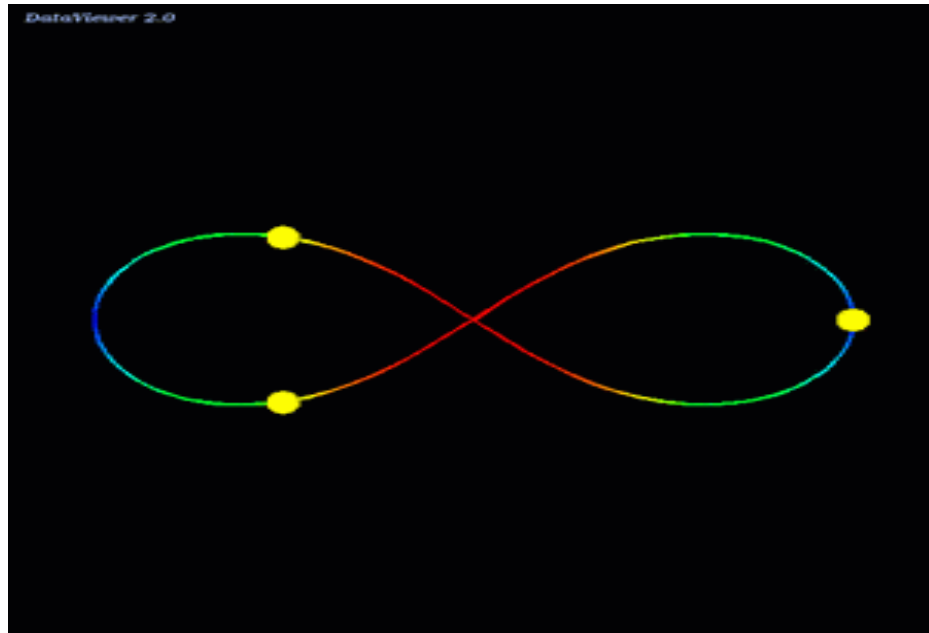


COLLOQUIUM



Dr. Alexander Turbiner
Universidad Nacional Autónoma de México

Choreography in Newtonian Mechanics

Abstract

The choreographic motion of N identical bodies is the periodic motion on a closed orbit, “chasing” each other without collisions. In Newtonian Gravity for 3-bodies Chris Moore made the unanticipated discovery of choreographic, figure eight orbits. These exact orbits were confirmed by Chenciner-Montgomery in 2000. Since then hundreds of choreographies have been found as a result of numerical solutions of systems of coupled Newton equations. In this lecture I will present a constructive analytic solution of the inverse problem. We then ask if 3,5,7... identical bodies can perform choreographic motion on the same figure eight orbit? How many sets of initial data lead to choreographic motion on the same figure eight orbit for a given (odd) N ?

4:00-4:50 p.m., Monday, September 17th, McLane Hall 258
NOTE SPECIAL TIME & PLACE