NYC Dynamics Seminar at CUNY & Yeshiva University

Richard Montgomery (UC Santa Cruz)

will speak on

The Hyperbolic Geometry and three- and four-body problems

Tuesday, September 13th, 5:30pm

Lectures will last 1 hour and be followed by questions and/or discussion.

Yeshiva University, 215 Lexington Ave, Room 506

On the SW corner of Lexington Ave and 33rd Street. You will need to sign in.

Abstract:

We begin by deriving the hyperbolic plane with its geodesic flow as the 'scale plus symmetry' reduction of a three-body problem in the Euclidean plane. The potential is homogeneous of degree -2, with denominator being the area squared of the triangle whose vertices are the three masses. The reduction method involves the Jacobi-Maupertuis metric in a central way and was used in my paper 'Putting Hyperbolic pants on a three body problem'. We will also review some aspects of that paper and some surprises from work of Connor Jackman on an analogous problem arising in the 1/r*r 4-body problem.
