

From micro-organisms to the three-body problem

Richard Montgomery

UC Santa Cruz

Resumo/Abstract:

In 1987 Jair Koiller told me a crazy science fiction story : how physicists Wilczek and Shapere could explain the swimming of micro-organisms using gauge theory. That story turned into a long road which took me from my original desire to work in high-energy theoretical physics to my true work on the three-body problem. On that road I encountered a falling cat composed of three mass points and he led to the three-body problem. Besides the telling of the story of this road, I will describe some insights (and perhaps an open problem) which a gauge-theoretic perspective affords celestial mechanics.