

CCSU  
DEPARTMENT OF MATHEMATICAL SCIENCES

# COLLOQUIUM

Friday, September 13

2:00 – 3:00 PM

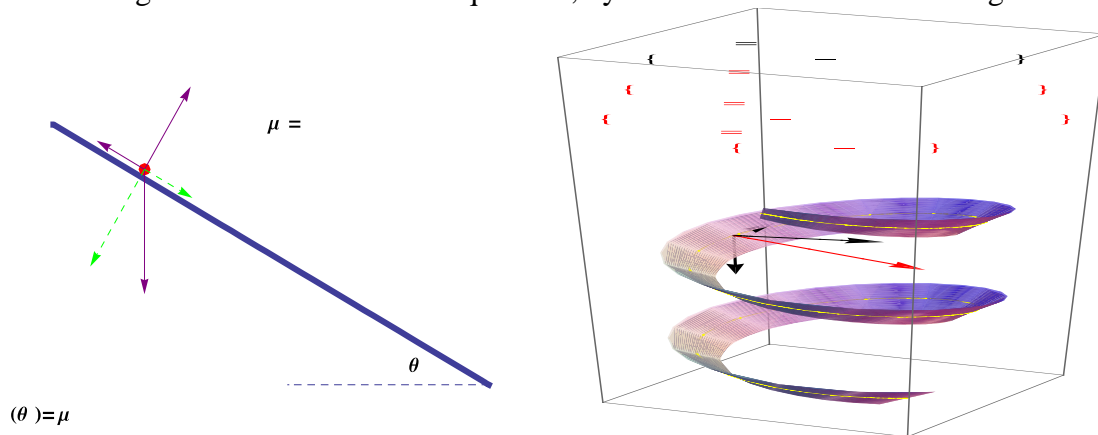
Maria Sanford, Room 101

## FRICITION KEEPING CONSTANT SPEED ON 3-D RAMPS

OSCAR PERDOMO

CENTRAL CONNECTICUT STATE UNIVERSITY

**Abstract:** It is easy to show that if the coefficient of kinetic friction between a block and a ramp is  $\mu$  and this ramp is a straight line with slope  $-\mu$  then, this object will move along the ramp with constant speed, see first picture below. A natural question to ask is the following: Besides straight lines, are there more shapes of ramps such that a block will go on the ramp with constant speed. In a previous talk, the speaker classified all the possible shapes of 2-dimensional ramps with this property. In this talk we will find a way to build 3-dimensional ramps with the same property. The second picture below shows one of these ramps. The talk is very basic. Students taking courses as differential equations, dynamics or statics are encouraged to come.



For further information:  
[gotchevi@ccsu.edu](mailto:gotchevi@ccsu.edu) 860-832-2839  
<http://www.math.ccsu.edu/gotchev/colloquium/>