CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES
VIRTUAL COLLOQUIUM

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3:00 – 4:00 PM
https://ccsu.webex.com/meet/gotchev

CONSTANT-SPEED RAMPS
FOR A CENTRAL FORCE FIELD

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Joint work with Rafael Lopez, Universidad de Granada, Spain

Abstract: In this talk we investigate the problem of determining the planar curves that describe ramps where a particle of mass m moves with constant-speed when is subject to the action of the friction force and a force whose magnitude F(r) depends only on the distance r from the origin. In this paper we describe all the constant-speed ramps for the case F(r) = −m/r. We show the circles and the logarithmic spirals play an important role. Not only they are solutions but every other solution approaches either a circle or a logarithmic spiral. More details of the talk can be found at https://arxiv.org/pdf/2005.10556.pdf.