New Trends in Onedimensional Dynamics
Celebrating the 70^{th} anniversary of Welington de Melo

Rio de Janeiro, November 14 - 18, 2016

Title: RECURRENT CURVATURE LINES ON EUCLIDEAN SURFACES

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Abstract: Principal curvature lines on a two-dimensional surface M^2 mapped into R^3 by means of an immersion α, with normal map N_α, are those maximal regular curves $\gamma : R \to M^2$ which solve the *Rodrigues* (quadratic, implicit) differential equation:

$$DN_\alpha(\gamma)\gamma\prime \wedge D\alpha(\gamma)\gamma\prime = 0.$$

In this talk we will provide examples of immersions α with recurrent principal curvature lines oriented compact surface M^2 with genus 2. Previous examples for the torus and sphere will be discussed as an initial motivation. Open problems will be stated at the end.