

UNIVERSIDADE FEDERAL DE SÃO CARLOS  
DEPARTAMENTO DE MATEMÁTICA

## COLÓQUIOS 2015

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(UFSCar - DM)

Falará sobre

### Stability of Solutions to Reaction-Diffusion Equations on Surfaces: Diffusivity versus Geometry

Consider the diffusion equation  $u_t = \operatorname{div}[a(x)\nabla u] + f(u)$  on a surface of revolution  $M$ . The diffusivity function  $a(x)$  depends on the material the surface is made of. We address the question of finding mechanisms of interaction between the diffusivity  $a(x)$  and the geometry of  $M$  which give rise to nonconstant stable stationary solutions to the above equation. Regarding nonexistence of such solutions, sufficient conditions which relate diffusivity  $a(x)$  and the geometry of  $M$  are found as well. Here stability is meant in the Lyapunov sense.

Sexta-feira, 02 de outubro, às 10h30min no Auditório