

**Título:** Periodic waves for the regularized Camassa-Holm equation: existence and spectral stability

Resumo:

In this talk, we investigate the existence and spectral stability of periodic traveling wave solutions for the regularized Camassa-Holm equation. To establish the existence of periodic waves, we employ tools from bifurcation theory to construct solutions with the zero-mean property. We also prove that such waves may not exist for the well-known Camassa-Holm equation. Regarding spectral stability, we analyze the difference between the number of negative eigenvalues of the second variation of the Lyapunov functional at the wave, restricted to the space of zero-mean periodic functions, and the number of negative eigenvalues of the matrix formed from the tangent space associated with the low-order conserved quantities of the evolution model. Finally, we address the problem of orbital stability as a consequence of spectral stability.