

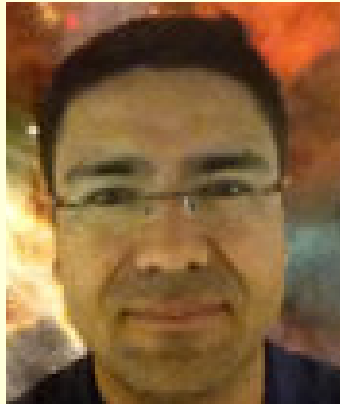
## ANUNCIO DE CONFERENCIA

*On closed solutions for inhomogeneous linear  
and nonlinear Schrodinger equations  
and applications to optics*

a cargo de

**Erwin Suazo**

University of Texas Rio Grande Valley



**RESUMEN:** The mathematical analysis of Partial Differential Equations (PDEs) has been fundamental to understanding how we can apply several PDEs to model real-life problems coming from physics, chemistry, biology and the social sciences. In this presentation we will discuss multiparameter solutions of the inhomogeneous paraxial wave equation in a linear and quadratic approximation which include oscillating laser beams in a parabolic waveguide. Also, by means of similarity transformations we study exact analytical solutions for a generalized nonlinear Schrödinger equation with variable coefficients. This equation appears in literature describing the evolution of coherent light in a nonlinear Kerr medium, Bose-Einstein condensates phenomena and high intensity pulse propagation in optical fibers. By restricting the coefficients to satisfy Ermakov-Riccati systems with multi-parameter solutions, we present conditions for existence of explicit solutions with singularities and a family of oscillating periodic soliton-type solutions. Also, we show the existence of bright-, dark- and Peregrine-type soliton solutions, and by means of a computer algebra system we exemplify the nontrivial dynamics of the solitary wave center of these solutions produced by our multi-parameter approach.

**Día y hora:** viernes, 5 de julio de 2019, a las 13h.

**Lugar:** Sala académica *Prof. Antonio Aizpuru*. Facultad de Ciencias, torre centro, segunda planta. Puerto Real.

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