School of Mathematical and
Statistical Sciences

Colloquium Series

Multiplicative operators in the spectral problem of integrable systems

Dr. Adrian Espinola-Rocha

Universidad Autonoma Metropolitana, Mexico

Abstract

The spectral problem of the Lax pair associated to periodic integrable partial differential equations is considered. It is assumed that the spectral problem is a scalar operator, polynomial of degree ”d” in the spectral parameter λ. From these assumptions, we find the conservation laws, as well the hyperelliptic curve associated to the integrable equation. A recursion formula is easily developed to find these conservation laws and the Lax hierarchy, as well as ”d” additional conditions which give information to solve the equation under consideration. Two classical examples are considered to show how the developed techniques work: the Korteweg-deVries (KdV) and the nonlinear Schr¨odinger (NLS) equations. This is a joint work with F.X. Portillo-Bobadilla. Universidad Autonoma de la Ciudad de Mexico. Campus Casa Libertad

Date: Friday, December 1, 2017
Time: 12:00pm–12:45pm
Place: EMAGC 1.302

The talk will be delivered live at the Edinburg campus and will be streamed to the Brownsville campus at BSABH 1.108. Refreshments will be served at11:45am.

For further information or for special accommodations, please contact Dr. BaoFeng Feng at 665-2269 or via email at baofeng.feng@utrgv.edu.

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