UTRGV

School of Mathematical and Statistical Sciences

Distinguished Colloquium Series

On the Interplay between Approximation Theory, Inverse Problems, and Non–smooth Solitons

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Abstract

This talk reviews the interplay between the mathematics of peakons (non-smooth solitons) and Approximation Theory. I will survey some decisive developments shaping my understanding of peakons and my motivation to study peakon-bearing equations. I will highlight the role of the Padé and Hermite-Padé approximations in the solution of inverse problems intrinsically related to these non-linear wave equations.

This talk is partly based on my recent joint work on the beam problem with Richard Beals, and on peakons with Hans Lundmark and Xiang-Ke Chang.

Short Bio of the Speaker

Dr. Szmigielski defended his Ph.D. dissertation on infinite-dimensional Grassmannians under the supervision of Dr. Dorfmeister at the University of Georgia in 1987. Then he held postdoc and visiting positions at the University of Virginia, University of Minnesota, and University of Kansas before joining the math department of the University of Saskatchewan in 1992. Dr. Szmigielski's mathematical interests include Integrable Systems, Inverse Problems, Peakon-Bearing Equations, Approximation Theory, Representation Theory of Infinite-Dimensional Lie Algebras. As an investigator, he conducted several prestigious research programs through Canadian funding agencies. He has published more than 70 high quality research papers, and most of his work were accepted in top journals including **Communications on Pure and Applied Mathematics, Communications in Mathematical Physics, Advances in Mathematics** etc.

Date: Friday, October 28, 2022

Time: 4:00-5:00 pm CT

Location: Zoom Only

Zoom: https://utrgv.zoom.us/j/88945268638

For further information or for special accommodations, please contact Dr. Alexey Glazyrin via email alexey.glazyrin@utrgv.edu and Dr. Zhijun Qiao via email zhijun.qiao@utrgv.edu