Brownsville Seminar



School of Mathematical & Statistical Sciences

Approximate Solutions to the Two Space Dimensional Euler Equations

Speaker: <u>Dr. Vesselin Vatchev</u>

Abstract:

The Euler Equations in Fluid dynamics first appeared more than 250 years ago to study fluid flows. In the talk we discuss the two space dimensional PDE governing inviscid flow in a narrow channel.

The system of equations consists of two linear and two nonlinear equations and a popular procedure to study it is to get a parametric solution of the linear equations and then to use the method of asymptotic expansion to approximate the nonlinear equations. At the next stage one usually seeks solitonic type traveling waves.

In the talk we discuss a modification of the asymptotic approximation approach for traveling wave solutions. The idea is first to get solutions of the nonlinear pair of PDE. The resulting functions we have obtained so far are approximate solutions of a

higher order and in a variety of channel settings.

Cookies and Coffee will be provided

Date: Friday, February 9, 2024 Time: 2:00pm – 3:00pm CT Location:BLHSB 1.316 & Zoom: https://utrgv.zoom.us/j/85333215080

For further information or for special accommodations, please contact Dr. Alexey Glazyrin via email <u>alexey.glazyrin@utrgv.edu</u>. More information about the seminar talks is available at the website <u>https://www.utrgv.edu/math/news-events/seminars/brownsville/index.htm</u>.