Institut Ruđer Bošković
ZAVOD ZA TEORIJSKU FIZIKU
Bijenička c. 54
Zagreb, Hrvatska

SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

(Zajednički seminari Zavoda za teorijsku fiziku,
Zavoda za eksperimentalnu fiziku i Zavoda za teorijsku fiziku PMF-a)

Does the complex extension of the Riemann equation exhibit shocks?

Joshua Feinberg
Department of Physics, Technion-Israel Institute of Technology, Haifa, Israel
Department of Physics, Oranim-University of Haifa, Tivon, Israel

Datum: petak, 21. rujna 2007.
Vrijeme : **12 sati c.t.**
Mjesto: IRB, predavaona I krila

Abstract:

Recently, there has been some interest in PT-invariant complex extensions of nonlinear equations of fluid dynamics, such as the KdV equation. I shall briefly review this activity. In this talk I will focus on the Riemann equation. The Riemann equation $u_t+uu_x=0$, which describes a one-dimensional accelerationless perfect fluid, possesses solutions that typically develop shocks in a finite time. This equation is PT symmetric. A one-parameter PT-invariant complex extension of this equation has the form $u_t - iu(iu_x)^\epsilon = 0$. In this paper this complex equation is solved exactly using the method of characteristic strips and it is shown that for real initial conditions shocks cannot develop unless ϵ is an odd integer.

Voditeljica seminara: Dr. Blaženka Melić
⟨*melic@thphys.irb.hr*⟩