



# SEMINAR IN INTEGRABLE SYSTEMS

During this seminar, several talks (from introductory to advanced) in the areas of nonlinear waves and integrability of PDEs are presented. Students, faculty and visitors are also invited to present.

**EMAGC 3.502**  
**WEDNESDAY, MARCH 21**  
**10:00AM - 12:00PM**

**"Electromagnetohydrodynamic flow between two transversely wavy microparallel plates"**

**Invited speaker: Dr. Yongjun Jian,  
Inner Mongolia University, China**

Abstract:

In this work, 2D electromagnetohydrodynamic flow in a microparallel channel with slightly transverse corrugated walls is investigated using perturbation method. The corrugations of the two walls are presented by periodic sinusoidal waves with small amplitudes. The perturbation solutions of the stream function and a relation between flow rate and roughness are obtained. The effects of related parameters, such as amplitude, phase and wave number of the roughness and Hartmann number on flow rate are studied. By numerical computation, the effects of the corrugations on the flow rates are analyzed graphically. The obtained results for the flow rates as a function of the applied current are in qualitative agreement with the existing experimental results.

Hosted by co-organizers Dr. Erwin Suazo, Dr. Zhihun Qiao, & Dr. Vesselin Vatchev  
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