Study programme(s): Mathematics PhD

Level: PhD

Course title: Nonlinear PDEs (AN-07)

Lecturer: Marko Ž. Nedeljkov

Status: elective

ECTS: 10

Requirements: Linear PDEs

Learning objectives
Basic techniques of hyperbolic conservation law systems

Learning outcomes
Understanding of basica analysis of conservattion law systems and solving Riemann and Cauchy problems

Syllabus
Theoretical instruction
Hyperbolic systems and entropy functionals. Continuum physics models and balance laws. Entropic solutions to Riemann problem, shock waves. Initial data for 1-D systems.

Literature
1. C.M. Dafermos, Hyperbolic Conservation Laws in Continuum Physics, IV ed, Springer 2009
2. A. Bressan, Hyperbolic system of Conservation Laws, Oxford, 2002.

Weekly teaching load				Other: 0
Lectures: 2	Exercises:	Other forms of teaching:	Student research: 6	

Teaching methodology
Presentation and student solitary work

Grading method (maximal number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	50	Oral exam	50