Study programme(s): Mathematics PhD	
Level: PhD	
Course title: Application of PDEs (AN-09)	
Lecturer: Marko Ž. Nedeljkov	
Status: elective	
ECTS: 10	
Requirements: Linear PDEs, Nonlinear PDEs	

Learning objectives
Analysis of PDEs arising from other sciences

Learning outcomes
Student should be able to do some analysis of real models by his/her own

Syllabus
Theoretical instruction
Students choose topics from:
Gas Dynamics (1- and multi-D)
Boltzman Equation
Equations of Navier-Stokes type
Magnetohydrodynamic models

Literature
1. C.M. Dafermos, Hyperbolic Conservation Laws in Continuum Physics, IV ed, Springer 2009
2. Sylvie Benzoni-Gavage, Denis Serre, Multi-dimensional Hyperbolic Partial Differential Equations, Oxford University Press, 2007.
3. A. Majda, Compressible Fluid Flow and Systems of Conservation Laws in Several Space Variables, Springer 1984
4. .C. Cercignani, The Boltzmann Equation and Its Applications, Springer, 1988

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