Study programme(s): Mathematics (MD)

Level: PhD

Course title: Pseudo-differential and Fourier integral operators 2

Lecturer: Stevan R. Pilipovic, Nenad M. Teofanov

Status: optional

ECTS: 10

Requirements: none

Learning objectives

Learning techniques of pseudo-differential calculus and applications in local, micro-local and asymptotic analysis.

Learning outcomes

It is expected that a student meets and learns basic properties and examples of parametrix of pseudo-differential and Fourier integral operators

Пожељно је да студент усвоји примене параметрикса у решавању једначина и симболични рачун.

It is desirable that a student adopts applications of parametrix in solving equations and symbolic calculus.

Syllabus

Parametrix for pseudo-differential and Fourier integral operators. Paraproducts. Wave-front sets. Asymptotics and theorems of Abelian and Tauberian type.

Literature

1. F. Treves, Introduction to the theory of pseudodifferential operators and Fourier integral Operators, V 1 and V.2, Plenum Press 1982
2. M.A. Shubin Pseudodifferential operators and spectral theory, Nauka, Moscow, 1978
3. Xavier Saint Raymond: Elemetary introduction to the Theory of pseudodifferential operators, CRC Press, 1991
4. S. Pilipović, B. Stanković, J. Vindas – Asymptotic Behavior of Generalized functions, ISAAC Series on Analysis Applications and Computation_Vol. 5, World Scientific, 2012.
5. F. Nicola, L. Rodino-Global Pseudo-Differential Calculus on Euclidean Spaces, Birknauser, 2010

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

Teaching methodology

Exposition of theoretical basics with comments.

Applications of theory through various examples of applications.

Grading method (maximal number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	60	Oral exam	40