MATH-706 **Perfectoid and prismatic methods**

Patakfalvi Zsolt

Cursus	Sem.	Type
Mathematics		Opt.

Language of teaching	English
Credits	3
Session	
Exam	Term paper
Workload	90h
Hours	**56**
Courses	28
Project	28
Number of positions	

Frequency

Only this year

Remark

This is an algebraic geometry PhD course about perfectoid and prismatic methods.

Summary

Contents: mixed characteristic geometry, perfectoid rings, primsatic cohomology and their applications to Kodaira type vanishing theorems.

Content

The topic is mixed characteristic algebraic geometry, more precisely, studying perfectoid rings, prismatic cohomology and some of their applications. We will follow parts of Bhatt's lectures on "Prismatic F-Gauges" and "Aspects of p-adic hodge theory". Among one of the goals is to understand the proof of vanishing theorems in mixed characteristic in detail. Another is to understand precisely prismatic cohomology and perfectoid rings.

Learning Prerequisites

Required courses

MATH 510 - Algebraic geometry II - schemes and sheaves

Recommended courses

MATH 535 - Algebraic geometry III - selected topics

Resources

Bibliography

Bhatt's lectures on "Prismatic F-Gauges" and "Aspects of p-adic hodge theory"

Moodle Link

- https://go.epfl.ch/MATH-706