

# Seminar in Autumn Semester 2025:

## Hilbert Complexes: Mathematical Analysis

Lecturer	: Prof. Ralf Hiptmair, D-MATH
Venue	: HG E 21
Time	: Monday, 16:15 - 18:00 : Thursday, 16:15 - 18:00
Language	: English
Prep meeting	: Monday, September 15, 17:15, HG E 21 : optional ZOOM Meeting ID: 654 8097 8647
Individual tutoring	: Monday
First session	: Monday, October 6 or later
Contact	: R. Hiptmair, <a href="mailto:hiptmair@sam.math.ethz.ch">hiptmair@sam.math.ethz.ch</a>
Prerequisites	: Basic knowledge functional analysis
Audience	: MSc & 3rd year BSc Students of Mathematics

### Description:

### Pre-Requisite Knowledge:

### Presentations:

Each topic defined by one or more research articles should be covered in a roughly 60 minute presentation, based on prepared slides, and, maybe, short explanations on the blackboard or tablet. The slides should be made available as PDF beforehand (Upload to polybox or send by email, filename Topic\_<NO>.pdf.)

The seminar will comprise up to 12 student presentations of a duration of about 60 minutes. They should be held by teams of three with members presenting in turns in random order.

Guidelines for preparing slides:

- Reduce text
- Use pictures and visual elements
- Use boxes and colors for highlighting
- Incrementally reveal content through overlays

Guidelines for structuring a talk:

- The presentations should be example-driven
- Exhibit core ideas by simplifying
- Repeat content: the audience cannot remember details from earlier slides
- Connect your presentation to previous talks.
- Zig-zag plan of talks: return to big picture and main objective occasionally.
- Keep a focus: discard marginal content

### **Quizz:**

Participants of the seminar will be asked questions about the previous presentations at the beginning of each session.

### **Available topics:**

1.

## Speakers and dates for presentations:

- Team 1:

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- Team 2:

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- Team 3:

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- Team 4:

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Date, Time	Room	<b>Team</b>	Topic #	Tutoring slot

The dates and times for the tutoring meeting are tentative. Those can also be conducted online on other dates.

Link for accessing literature and slides: <https://polybox.ethz.ch/index.php/s/Bhzz4t0HpG623Ka>, password: HC\_HS25