

# Student Seminar on Cyclic Homology

癸卯年冬 January 2024

Fudan University

220 Handan Road, Yangpu District, Shanghai 200433, China

## 1 Topic

As the title suggests, this student seminar will focus on cyclic homology and algebraic K-theory.

## 2 Goal

As Prof.Wang claimed, he would give a course[MATH630012, 循环同调论] about cyclic homology in Spring 2024. We are holding this student seminar to prepare for the course lest we don't understand anything in class and just goof off instead.

## 3 Schedule

The seminar will take the form of online discussions via Tencent Meeting during the winter break and take the form of offline (if needed) in the coming spring semester, whereas specific time arrangements are to be decided. In principle, there will be 2 meetings per week during the break and 1 meeting per week in the spring semester. Each talk should take about one and a half hours (with a ten-minute break) and is welcomed to last longer if the speaker wishes.

## 4 Syllabus

We will basically follow the chapter 6 in Rosenberg's book. The contents listed below, which we would mainly focus on, can all be found within it. We also recommend the speakers to look into the books in reference. More details of the syllabus will be added after our first discussion.

1. Cyclic Homology
2. Algebraic K-Theory (Maybe Briefly)
3. The Chern Character
4. Some Applications

## 5 Reference

*Algebraic K-Theory and Its Applications* By Jonathan Rosenberg

*Cyclic Homology* By Jean-Louis Loday

*Non-Commutative Differential Geometry* By Alain Connes

*Cyclic Homology in Non-Commutative Geometry* By Joachim Cuntz , Georges Skandalis , Boris Tsygan

## 6 Organizers

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Anyone who wants to join this seminar could contact one of the organizers or just scan the QR code below.



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