Kleines Seminar, RCOA at ECNU

学年	2022 年春季学期，2022 年 2 月 21 日至 2022 年 6 月 30 日，共 18 周		
地点	线上腾讯会议 ID 329 8591 7934 及线下（暂定）	时间	周四上午 10 点

报告者/时间	报告内容
郭　亮 3 月 24 日	On rigidity of Roe algebras; J. Spakula, R. Willett
张亚洲 3 月 31 日	L^2-index theorems, KK-theory, and connections; Thomas Shick
罗　政 4 月 7 日	题目：The Novikov conjecture and geometry of Banach spaces 摘要：In this paper, we prove the strong Novikov conjecture for groups coarsely embeddable into Banach spaces satisfying a geometric condition called Property (H).

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王子竞 4 月 14 日	题目：Superconnections，Thom class，and Equivariant differential forms; Mathias and Quillen; 摘要：In this paper，authors apply a superconnection formalism to the explicit Clifford module representative for the Thom class in K-theory belonging to a real vector bundle of even rank with spin structure. What they find is a refinement of the well-known Riemann-Roch formula linking the Thom classes in K-theory and cohomology to an equality on the level of differential forms.
张超华 4 月 21 日	题目：Localization C*-algebras and K-theoretic duality； Marius Dadarlat, Rufus Willett, and Jianchao Wu, 摘要：Based on the localization algebras of Yu, and their subsequent analysis by Qiao and Roe, authors give a new picture of KK-theory in terms of time-parametrized families of (locally) compact operators that asymptotically commute with appropriate representations.
韦斯翰 4 月 28 日	题目：Embedding Problem and almost finiteness 摘要：We will talk about an embedding theorem of actions of non-commutative groups on compact spaces into subshifts. The embedding theorem is a classic problem in topological dynamical system and the last result regards for the first time of non-commutative group actions, which involves the concepts of almost finiteness, in the sense of Matui and Kerr.

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王燕如 5 月 12 日	题目：Quantitative K-theory for Banach algebras； Yeong Chyuan Chung 摘要: Based on Yu and Oyono-Oyono's work on quantitative K-theory for C*-algebras, Chung developed a framework of quantitative K-theory for the SQp algebras and proved the existence of a controlled Mayer-Vietoris sequence.
王若飞 5 月 19 日	题目: Almost normal implies close to normal 摘要: Huaxin Lin proves an old important problem that almost normal element in matrices implies close to normal element. Peter Friis extends the theorem for some more C*-algebras.
郭　亮 5 月 26 日	题目：Relative commutant pictures of Roe algebras 摘要：In this report, we will introduce some new discriptions of the Roe algebra of a proper metric space with Yu's Property A. This report is based on [1] and [2]. 参考文献： [1] Ján Špakula, Aaron Tikuisis. Relative Commutant Pictures of Roe Algebras, Commun. Math. Phys. 365, 1019–1048 (2019) [2] Ján Špakula, Jiawen Zhang. Quasi-locality and Property A, Journal of Functional Analysis 278, no. 1, 108299 (2020)

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罗　政 6月2日	题目：Coarse Actions 摘要：In this chapter we study coarse actions of coarse groups. One of the main points is to illustrate the connection between coarse group actions and geometric group theory
王子竞 6月16日	题目：The equivariant Chern character and index of G-invariant operators; Lectures at CIME, Venise 1992; Nicole Berline and Michele Vergne 摘要：In this paper, we will use superconnections instead of excision in order to define the Chern character. Our motivation is to apply to the Atiyah-Singer index formula this way of computing the Chern character. The index formula thus obtained will generalize nicely to the equivariant case, including the case of transversally elliptic pseudodifferential operators.

张超华 6 月 23 日	题目：Crossed product approach to equivariant localization algrbras； Shintaro Nishikawa； 摘要：The goal of this article is to provide a bridge between the gamma element method for the Baum–Connes conjecture (the Dirac dual-Dirac method) and the controlled algebraic approach of Roe and Yu (localization algebras). For any second countable, locally compact group G, we study the reduced crossed product algebras of the representable localization algebras for proper G spaces. We show that the naturally defined forget control map is equivalent to the Baum–Connes assembly map for any locally compact group G and for any coefficient G-C*-algebra B. We describe the gamma element method for the Baum–Connes conjecture from this controlled algebraic perspective. As an application, we extend the recent new proof of the Baum–Connes conjecture with coefficients for CAT(0)-cubical groups to the non-cocompact setting.
王燕如 6 月 30 日	题目：A modern look at algebras of operators on Lp-spaces； Eusebio Gardella； 摘要：For Lp operator algebras, we give a modern overview of this research area whose beginnings can be traced back to the 1950s and that has seen renewed attention in the last decade through the infusion of new techniques.