# Kleines Seminar, RCOA at ECNU

| 学年 | 2023 年秋季学期 | 时间 | 每周二下午 14 点 |
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| 地点 | 算子代数研究中心 (理科大楼 A503) | | |

| 报告者/时间 | 报告内容 |
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| 钱进 博士<br>9 月 26 日 | Title： A Very Basic Introduction to Nonstandard Analysis with an Application on Coarse Geometry<br><br>Abstract： In this talk, I will introduce some basic properties of hyperreals and set-theoretical ultraproduct of metric spaces. As an application, I will talk about the nonstandard descriptions of coarse maps and coarse embeddings. |
| 王亮 博士<br>(武汉大学)<br>10 月 10 日 | Title： An introduction to quantum Euclidean spaces<br><br>Abstract: Quantum Euclidean spaces are model examples of noncommutative spaces in the locally compact setting, and can be viewed as locally compact counterparts of quantum tori.<br><br>In this talk, I will briefly introduce some concepts and properties related to quantum Euclidean spaces. |

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| 郭亮 博士<br><br>10 月 17 日 | Title：Bott periodicity and almost commuting matrices<br><br>Abstract：In this talk, I will introduce an approach to the Bott periodicity theorem by using a famous example of almost commuting matrices introduced by Voiculescu. This talk is based on a paper of Rufus Willett. |
| 王子竞 博士<br><br>10 月 31 日 | Title：Poincaré-Hopf index formula and Witten deformation<br><br>Abstract：In this talk, I will introduce an approach to the Poincaré-Hopf index formula by using Witten deformation. |
| 姚秀峰 博士<br><br>11 月 7 日<br><br>11 月 14 日<br><br>11 月 21 日 | Title：An elementary introduction to the Dirac-dual-Dirac method<br><br>Abstract：In this talk, we will briefly review the construction of Kasparov products, Dirac elements, and Bott elements. We will also give a brief introduction of the Green-Julg theorem, and then prove the Baum-Connes conjecture with coefficients of proper algebras. Finally, we will construct the classical Dirac dual-Dirac method. |

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| 吴文青 博士 <br> 12 月 5 日 | Title： The weakly containment and K-amenability <br><br> Abstract： In this talk, we will introduce some properties of weakly contained representations, which is an important character of K-amenable groups. We will also see that when G acts on a tree and the stabilizers of vertices are amenable groups, then the representation is weakly - contained in the left regular representation. |
| 王燕如 博士 <br> 12 月 12 日 | Title： Representations of étale groupoids on $L^p$-spaces <br><br> Abstract： In this talk, I introduce the work of Gardella and Lupini on representations of étale groupoids on $L^p$-spaces for $p \in (1, \infty)$. Moreover, I review the notions of the full and reduced groupoid $L^p$ operator algebras $F^p(G)$ and $F_r^p(G)$ for an étale groupoid $G$. Finally, I show that every contractive representation of $F^p(G)$ and $F_r^p(G)$ is automatically $p$-completely contractive, which yields that their matrix norms are uniquely determined. |
| 向少聪 博士 <br> 12 月 19 日 | Title： Lipschitz controlled K-theory and uniformly controlled inductive systems <br><br> Abstract： Inspired by quantitative K-theory, Jinmin Wang, Zhizhang Xie and Guoliang Yu develop a concept of Lipschitz controlled K-theory. In this talk, I will briefly introduce some properties of Lipschitz controlled K-theory. |

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| 任百颖 博士<br><br>12 月 26 日 | Title： On the Baum-Connes Conjecture for Groups Acting on CAT(0)-Cubical Spaces<br><br>Abstract： In this talk, I will introduce the paper entitled "On the Baum-Connes Conjecture for Groups Acting on CAT(0)-Cubical Spaces" by J. Brodzki, E. Guentner, N. Higson and S. Nishikawa. In this paper, the authors present a new proof of the Baum-Connes conjecture with coefficients for any second countable, locally compact group that acts properly and cocompactly on a bounded geometry CAT(0)-cubical space. The approach of this paper is based on the combinatorial setting of CAT(0)-cubical spaces. |

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