2021 年秋季学期代数短期课程计划

课程名称：

local and 2-local derivations and automorphisms of Lie Algebras

授课人：**赵开明教授（加拿大罗瑞尔大学）**

授课方式：**腾讯会议**

课程简介：

This is a 5-week mini-course for graduate students and young Lie algebra researchers. We will first spend some time on reviewing history and results on this topic. Then we will present various recent results with detailed proofs, including finite-dimensional Lie algebras, Witt algebras. Its goal is to prepare the students for further study and research on local and 2-local derivations and automorphisms of various interesting Lie Algebras, possibly establish some general results.

The course will introduce the concepts: local and 2-local derivations and automorphisms of Lie Algebras. The main problem in this subject is to determine all local and 2-local automorphisms (resp. local and 2-local derivations), and to see whether every local or 2-local automorphism (resp. local or 2-local derivation) automatically becomes an automorphism (resp. a derivation) of Lie Algebra, that is, whether automorphisms (resp. derivations) of an algebra can be completely determined by their local actions. The contents of this course come from scattered recent research papers, including

- Sh. A. Ayupov, K. K. Kudaybergenov, I. S. Rakhimov, 2-Local derivations on finite-dimensional Lie algebras, Linear Algebra and its Applications, 474, (2015), 1-11.
- Sh. A. Ayupov, K. K. Kudaybergenov, Local derivations on finite-dimensional Lie algebras, Linear Algebra Appl. 493 (2016), 381-398.
- Y. Zhao, Y. Chen, K. Zhao, 2-local derivations of Witt algebras, J. Algebra Appl., 20 (2021), no. 4, 2150068, 11 pp, https://doi.org/10.1142/S0219498821500687.
- Y. Chen, K. Zhao, Y. Zhao, local derivations of Witt algebras, Linear and Multilinear Algebra, https://doi.org/10.1080/03081087.2020.1754750.
- Y. Chen, K. Zhao, Y. Zhao, Local and 2-local automorphisms of simple generalized Witt algebras, arXiv:2003.13893, Arkiv för Matematik, Vol. 59, No. 1 (2021), 1-10.

课程安排：

日期	时间	腾讯会议 ID
2021/11/07 周日	8:00-10:30	ID：994 5897 0740，密码：1112
2021/11/13 周六	8:00-10:30	ID：958 343 371，　密码：1112
2021/11/21 周日	8:00-10:30	ID：994 5897 0740，密码：1112
2021/11/28 周日	8:00-10:30	ID：994 5897 0740，密码：1112
2021/12/05 周日	8:00-10:30	ID：994 5897 0740，密码：1112

授课人简介：

赵开明，加拿大罗瑞尔大学教授、博导，河北师范大学兼职教授、博导，中国科学院“百人计划”入选者。主要从事李代数、非交换代数等领域的研究工作，在 *Adv. Math.*、*Proc. London Math. Soc.*、*Trans. Amer. Math. Soc.*、*Israel J. Math.*、*Math. Z.*、*Selecta Math.(N.S.)*、*J. Algebra*、*J. Pure Appl. Algebra* 等杂志发表高水平学术论文 130 余篇，其研究成果受到国际同行的高度评价。主持完成多项加拿大研究理事会基金项目和多项国家面上项目，是国际代数学领域有重要影响的专家。