NONCOMMUTATIVE GRÖBNER BASIS AND EXT GROUPS

Speaker: Weinan Lin
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Abstract: The Gröbner basis is a powerful tool in commutative algebra. We can use it to do many calculations such as computing the presentations of the kernel and cokernel of a map between finitely presented modules over a commutative algebra. However, many important algebras including the Steenrod algebra in algebraic topology are not commutative. We make a noncommutative generalization of the Gröbner basis which can be applied to the Steenrod algebra A. This leads to highly efficient calculations in the category of A-modules including the computation of E2 pages of Adams spectral sequences.

个人介绍:

林伟南博士目前任北京大学数学科学学院师资博士后，合作导师是田刚院士。他 2015 年本科毕业于北京大学数学科学学院，2021 年获（美国）芝加哥大学数学博士学位。林伟南的研究兴趣集中在代数拓扑的稳定同伦理论和计算代数。