On the Automorphism Groups of Cyclic Codes

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Venue: Room 106, SCMS

Abstract:

The study of cyclic codes has been of great interest since the origin of coding theory, and such codes have important applications in the real world. Their algebraic structures faciliate efficient encoding and decoding algorithms, and there have been extensive work on their automorphism groups. In this work, I will report on some recent work on the determination of automorphism groups of irreducible cyclic codes. It turns out that irreducible cyclic codes are mostly standard, i.e., have no extra automorphism. The proof explores the subgroup structures of general linear groups. This is a joint work with Henk Hollmann, Weicong Li and Qing Xiang.