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MATHEMATICS DEPARTMENT 25TH YEAR SEMINARS

Group codes: an application of group algebras to coding theory

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Abstract: Berman and MacWilliams independently define group codes as ideals in finite group algebras. Many linear codes can be viewed as group codes. For example, cyclic codes can be considered as ideals in finite group algebras of cyclic groups and Reed Muller codes over \mathbb{F}_p can be viewed as ideals in modular group algebra of an elementary abelian p -group. Group codes have richer algebraic structures than linear codes, for that reason, considering codes as group codes have many advantages. Algebraic tools in ring theory and character theory can be used to understand codes via group codes. In this talk I will give a gentle introduction for group codes and state some problems and results in the literature. If time permits, I will state some recent contributions which are joint work with İpek Tuvay.

Date: June 4, 2021; Friday

Time: 16:00

Place: Zoom



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