

# Combinatorial problems on zero-sum sequences

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*Abstract.* Let  $G$  be a finite abelian group and  $M(G, k)$  is the set of all zero-sum sequences over  $G$  of length  $k$ . Zero-sum sequence is a classical object in additive combinatorics. In this talk, we show that the study of  $M(G, k)$  is closely related to some other interesting combinatorial problems: combinatorial reciprocity [1, 6], cyclic sieving phenomenon [5], and Cayley tables of finite abelian groups [4, 7, 8].

*About the speaker.* Hanbin Zhang is an associate professor at the School of Mathematics (Zhuhai) of Sun Yat-sen University, where he has been since August 2020. Before joining SYSU, he was a postdoc at the Institute of Mathematics of Chinese Academy of Sciences. His research interests include additive combinatorics (especially zero-sum theory), algebraic combinatorics, and coding theory. He published several papers in SIAM J. Discrete Math., Des. Codes Cryptogr., J. Number Theory, and Electronic J. Combin.

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