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*Abelian powers and patterns in words: problems and perspectives*

Two words are abelian equivalent if one is a permutation of the other. Thus "red" and "der" are abelian equivalent, and "redder" is then an abelian square. In other words, "redder" is an abelian instance of the pattern  $xx$ , with  $x = red \sim der$ . Erdős asked if there exists an infinite word over a finite alphabet avoiding abelian squares. Since then, many more general questions have arisen, including the study of abelian  $k$ -powers, where  $k$  may be fractional, and decision problems related to abelian instances of more general patterns. I will present an overview of the results in this area.