

# Permutation patterns as an example in the theory of relational structures

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A permutation in  $S_n$ , from the viewpoint of permutation patterns, can be described as a pair of linear orders on the set  $\{1, 2, \dots, n\}$ . Thus the study of permutation patterns can thus be viewed as one particular example in the study of relational structures, an amorphous field that includes as other examples the study of posets, partitions, and graphs. While much permutation patterns research is specific to permutations, owing both to the peculiarities of permutations and the largely enumerative interests of permutation pattern researchers, there are several areas in which the theory of relational structures can be applied. I will describe two such areas: atomicity and simplicity.