

A permutation class C is splittable if it is contained in a merge of its two proper subclasses, and it is 1-amalgamable if given two permutations $\sigma, \tau \in C$, each with a marked element, we can find a permutation $\pi \in C$ containing both σ and τ such that the two marked elements coincide. In this thesis, we study both 1-amalgamability and splittability of permutation classes. It was previously shown that unsplitability implies 1-amalgamability. We prove that unsplitability and 1-amalgamability are not equivalent properties of permutation classes by showing that there is a permutation class that is both splittable and 1-amalgamable. Moreover, we show that there are infinitely many such classes. Our construction is based on the concept of LR-inflations or more generally on hereditary 2-colorings, which we both introduce here and which may be of independent interest.