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Tree-like properties of cycle factorizations

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Abstract We provide a bijection between the set of *factorizations*, that is, ordered $(n-1)$ -tuples of transpositions in \mathcal{S}_n whose product is $(12\dots n)$, and labelled trees on n vertices. We prove a refinement of a theorem of Dénes [3] that establishes new tree-like properties of factorizations. In particular, we show that a certain class of transpositions of a factorization correspond naturally under our bijection of leaf edges of a tree. Moreover, we give a generalization of this fact.