

Title: Bilateral semidirect product decompositions of transformation monoids

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Abstract: In this paper we consider the monoid $OR(n)$ of all full transformations on a chain with n elements that preserve or reverse the orientation, as well as its submonoids $OD(n)$ of all order-preserving or order-reversing elements, $OP(n)$ of all orientation-preserving elements and $O(n)$ of all order-preserving elements. By making use of some well known presentations, we show that each of these four monoids is a quotient of a bilateral semidirectproduct of two of its remarkable submonoids.

Author Keywords: Bilateral Semidirect Products; Transformation Semigroups; Free Monoids; Presentations

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