

Title: On the monoids of transformations that preserve the order and a uniform partition

Author(s): Fernandes, Vítor H.¹; **Quinteiro, Teresa M.**³

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Abstract: In this article we consider the monoid $O(m \times n)$ of all order-preserving full transformations on a chain with mn elements that preserve a uniform partition and its submonoids $O(m \times n)(+)$ and $O(m \times n)(-)$ of all extensive transformations and of all co-extensive transformations, respectively. We determine their ranks and construct a bilateral semidirect product decomposition of $O(m \times n)$ in terms of $O(m \times n)(-)$ and $O(m \times n)(+)$.

Author Keywords: Equivalence-Preserving Transformations; Order-Preserving Transformations

KeyWords Plus: Semidirect Products; Semigroups; Mappings; Endomorphisms

Reprint Address: Fernandes, VH (reprint author), Univ Nova Lisboa, Fac Ciencias & Tecnol, Dept Matemat, P-2829516 Caparica, Portugal.

Addresses:

1. Univ Nova Lisboa, Fac Ciencias & Tecnol, Dept Matemat, P-2829516 Caparica, Portugal
2. Univ Lisbon, Ctr Algebra, P-1699 Lisbon, Portugal
3. Inst Super Engrn Lisboa, Lisbon, Portugal

E-mail Address: vhf@fct.unl.pt

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