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Title: Palindromic automorphisms of free groups

Authors: Gongopadhyay, Krishnendu (/jspui/browse?type=author&value=Gongopadhyay%2C+Krishnendu)

Singh, Mahender (/jspui/browse?type=author&value=Singh%2C+Mahender)

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Abstract: Let Fn be the free group of rank n with free basis $X=\{x1,\ldots,xn\}$. A palindrome is a word in $X\pm 1$

that reads the same backwards as forwards. The palindromic automorphism group ΠAn of Fn consists of those automorphisms that map each xi to a palindrome. In this paper, we investigate linear representations of ΠAn, and prove that ΠA2 is linear. We obtain conjugacy classes of involutions in ΠA2, and investigate residual nilpotency of ΠAn and some of its subgroups. Let IAn be the group of those automorphisms of Fn that act trivially on the abelianisation, Pln be the palindromic Torelli group of Fn, and let $\ensuremath{\mathsf{E}}\Pi\ensuremath{\mathsf{A}}\ensuremath{\mathsf{n}}$ be the elementary palindromic automorphism group of Fn. We prove that PIn=IAn∩EΠAn'. This result strengthens a recent result of Fullarton

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