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On the structure of Picard group for Moebius ladder. (English) Zbl 1329.05147

Summary: The notion of the Picard group of a graph (also known as Jacobian group, sandpile group, critical group) was independently given by many authors. This is a very important algebraic invariant of a finite graph. In particular, the order of the Picard group coincides with the number of spanning trees for a graph. The latter number is known for the simplest families of graphs such as Wheel, Fan, Prism, Ladder and Moebius ladder graphs. At the same time the structure of the Picard group is known only in several cases. The aim of this paper is to determine the structure of the Picard group of the Moebius ladder graphs.

MSC:
05C25 Graphs and abstract algebra (groups, rings, fields, etc.)

Keywords:
graph; Picard group; abelian group; Chebyshev polynomial

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