

Tours of a Generalized Knight on Rectangular Chessboards

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A $\{1, 4\}$ -leaper on an $m \times n$ chessboard is a generalized knight that moves one unit horizontally or vertically and four units in the perpendicular direction. If a $\{1, 4\}$ -leaper graph of an $m \times n$ board contains a Hamiltonian cycle, then this cycle corresponds to a $\{1, 4\}$ -leaper tour. In this paper, we classify many (but not all) of the dimensions of a rectangular chessboard which allow a closed $\{1, 4\}$ -leaper tour.