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ON THE NUMBER OF DISJOINT 4-CYCLES IN REGULAR TOURNAMENTS [1]

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Abstract

In this paper, we prove that for an integer $r \geq 1$, every regular tournament T of degree $3r-1$ contains at least $\frac{21}{16}r - \frac{10}{3}$ disjoint directed 4-cycles. Our result is an improvement of Lichiardopol's theorem when taking $q = 4$ [Discrete Math. **310** (2010) 2567–2570]: for given integers $q \geq 3$ and $r \geq 1$, a tournament T with minimum out-degree and in-degree both at least $(q-1)r - 1$ contains at least r disjoint directed cycles of length q.

Keywords: regular tournament, C_4-free, disjoint cycles.

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