

**Araujo-Pardo, Gabriela; Olsen, Mika**

**A conjecture of Neumann-Lara on infinite families of  $r$ -dichromatic circulant tournaments.**

(English) [Zbl 1185.05071](#)

[Discrete Math.](#) 310, No. 3, 489-492 (2010).

Summary: We exhibit infinite families of vertex critical  $r$ -dichromatic circulant tournaments for all  $r \geq 3$ . The existence of these infinite families was conjectured by Neumann-Lara [*V. Neumann-Lara*, "Vertex critical 4-dichromatic circulant tournaments", *Discrete Math.* 170, No. 1-3, 289–291 (1997; [Zbl 0876.05039](#))], who later proved it for all  $r \geq 3$  and  $r \neq 7$ . Using different methods, we provide new constructions of such infinite families for all  $r \geq 3$ , which covers the case  $r = 7$  and thus settles the conjecture.

**MSC:**

[05C20](#) Directed graphs (digraphs), tournaments

[05C15](#) Coloring of graphs and hypergraphs

[05C63](#) Infinite graphs

Cited in **5** Documents

**Keywords:**

[circulant tournament](#); [dichromatic number](#); [vertex critical](#)

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