

Three min/max theorems for coherent cyclic orders of digraphs. A proof of a conjecture of Gallai.

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In a previous talk, Stéphan Thomassé introduced the notion of *coherent cyclic order* of a strong digraph. In collaboration with him, we proved three min/max theorems related to these cyclic orders. They concern cyclic equivalent of stability number, maximal feedback arc sets number and chromatic number of a digraph. We connect these numbers with particular configuration of circuits in the cyclic order.

In particular, the first theorem about cyclic independence number gives as corollary a proof of a conjecture of Gallai (1963): every strong digraph admits a spanning set of at most α circuits, where α is the independence number of the digraph.