# Median orders and coherent cyclic orders of digraphs

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A *median order* of a digraph is an enumeration of the set of vertices which maximizes the set of forward arcs. For instance, a median order $x_1, \ldots, x_n$ of a tournament is in particular a hamilton path. For strong tournaments, one would like to find a hamilton circuit with a similar trick - but maximizing forward arcs in a cyclic order is not really a clear goal. We introduce with Stéphane Bessy the notion of *coherent cyclic order* of a strong digraph: It is a cyclic enumeration $x_1, \ldots, x_n$ which is such that every arc is in a circuit which has index one (i.e. its winding number is one) with respect to the enumeration. In particular a coherent cyclic order of a tournament gives a hamilton circuit. I will present some applications of these two notions. In a following talk, Stéphane Bessy will prove three min/max theorems related to coherent cyclic orders.