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ON FIXED-PARAMETER TRACTABILITY OF THE JUMP NUMBER PROBLEM OF INTERVAL ORDERS

The jump number problem of posets consists of determining a linear extension that minimizes the number of noncomparable adjacent elements. This problem has applications in the area of one-processor scheduling, where a class of posets called interval orders is applicable, i.e., posets in which the order relation is given by placement of intervals on the real line. Let us denote the jump number of given poset P by $s(P)$. It is NP-complete to determine $s(P)$ both in the general case of arbitrary posets [1], as well as if only interval orders are considered [3]. We are interested in answering the following question: is $s(P)$ less than or equal to k , where k is a fixed parameter? This question has been answered by means of a fixed-parameter algorithm for arbitrary posets [2]. We demonstrate our latest results concerning the fixed parameter tractability of determining $s(P)$ in a class of interval orders.

REFERENCES

- [1] V. Bouchitte, M. Habib, *NP-completeness Properties about Linear Extensions*
- [2] C. McCartin, *An Improved Algorithm for the Jump Number Problem*
- [3] J. Mitas, *Tackling the Jump Number of Interval Orders*