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A Faster Algorithm for Recognizing Edge-Weighted Interval Graphs

We investigate an edge-weighted version of interval graphs. A graph with weights on its edges is an edge-weighted interval graph if we can assign intervals to the vertices so that the weight of an edge (u, v) is equal to the length of the intersection of the intervals assigned to u and v . In 2012, Köbler, Kuhnert, and Watanabe gave an algorithm to recognize such graphs in time $O(m \cdot n)$, where m and n are the number of edges and vertices, respectively, of the given graph. We improve the runtime of this algorithm to $O(m \cdot \log n)$ using *PQ* trees.

Joint work with Anna Lubiw.