Unit Mixed Interval Graphs

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The class of unit interval graphs has a lovely characterization as those interval graphs with no induced claw $K_{1,3}$. The characterization remains the same whether the intervals used in the intersection representation are all open intervals or all closed intervals. In recent work, Rautenbach and Szwarcfiter characterize the broader class that arises when both open and closed intervals of unit length are permitted. In this talk we consider the same problem when unit length mixed intervals of the form $(x, x + 1]$ and $[x, x + 1)$ are also allowed. We give a structural characterization of this class of graphs. A characterization was proved independently by Felix Joos, however, our approach provides an algorithm as well as a forbidden graph characterization.

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