

## ON INTERVAL GRAPHS REPRESENTED BY TWO INTERVAL SIZES

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For an integer  $k$ , the *interval count*,  $IC(G)$ , is the minimum number of interval sizes necessary to represent an interval graph  $G$ . The problem of determining  $IC(G)$  has been introduced about 40 years ago, and characterizing which are the graphs whose interval count is  $k$  remains open since then, for any integer  $k > 1$ . Perhaps surprisingly there are a few unexpected results and paradoxes, concerning it and related questions. In this talk, we consider the class  $LEN(a, b)$  of interval graphs which admit representations having intervals of sizes  $a$  and  $b$ , for non negative reals  $a, b$ . We determine the inclusion relations among the classes  $LEN(a, b)$  and  $LEN(a', b')$ , for any non negative reals  $a, b, a', b'$ , leading to some results which were unexpected to the authors.

Keywords: interval count, interval graphs and orders, interval sizes, representations