

1135-VP-2007 **Pamela Kirkpatrick*** (prk213@lehigh.edu). *Structural considerations for interval orders with length constraints.*

Interval orders are a class of partially ordered sets (posets), each element of which can be represented by an interval on the real line such that the interval corresponding to x lies completely to the left of the interval corresponding to y if and only if x precedes y under the poset relation. We will look at variations of interval orders which include length constraints for the intervals. In 1985, Fishburn published a list of forbidden suborders which prevent a partially ordered set from having an interval representation with lengths in $[p, q]$, for positive integers, p, q . Using tools from weighted digraphs, we present an alternative approach to this problem and provide a list of *minimal* forbidden suborders for interval lengths in $[2, q]$. (Received September 25, 2017)