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Enumeration of a Poset's Ideals

A subset of elements of a partially ordered set, poset for short, is an ideal, or downset, if it is closed under taking predecessors. Usually posets have exponentially many ideals and their enumeration has been long considered. So far the best known algorithm due to Habib, Medina, Nourine and Steiner takes time $O(\Delta)$ amortized per ideal. Here, Δ denotes the maximum number of immediate successors of an element.

In this talk we take a refined look at their algorithm, extracting optimal enumeration for 2-dimensional and planar posets.