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*Excluding a ladder*

A  $k$ -ladder is a  $2 \times k$  grid graph. Which graph classes  $\mathcal{C}$  exclude some ladder as a minor? We show that this is the case if and only if all graphs  $G$  in  $\mathcal{C}$  admit a proper vertex coloring with a bounded number of colors such that for every 2-connected subgraph  $H$  of  $G$ , there is a color that appears exactly once in  $H$ . Our structural results have applications to poset dimension: Posets whose cover graphs exclude a fixed ladder as a minor have bounded dimension.

Joint work with Tony Huynh, Gwenaël Joret, Michał Seweryn, Paul Wollan.