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INDUCED POSET SATURATION IN THE HYPERGRID

Given a poset P which can be embedded as an induced subposet of $[t]^n$, the induced poset saturation function $\text{sat}^*([t]^n, P)$ denotes the minimum size of a subset of $[t]^n$ that is both induced P -free and induced P -saturated. We show that for all $t \geq 2$, $\text{sat}^*([t]^n, P)$ satisfies a dichotomy: for every poset P , either there exists a constant C_P such that $\text{sat}^*([t]^n, P) = C_P$ for all n sufficiently large, or $\text{sat}^*([t]^n, P) = \Omega(\sqrt{n})$.

This is joint work with Victor Falgas-Ravry, Sabrina Lato, and Maryam Sharifzadeh.