Ryan R. Martin, Heather C. Smith and Shanise Walker* (walkersg@uwec.edu). Lower bounds for induced poset saturation.

Given a finite poset $\mathcal{P}$, a family $\mathcal{F}$ of elements in the Boolean lattice is induced-$\mathcal{P}$-saturated if $\mathcal{F}$ contains no copy of $\mathcal{P}$ as an induced subposet but every proper superset of $\mathcal{F}$ contains a copy of $\mathcal{P}$ as an induced subposet. The minimum size of an induced-$\mathcal{P}$-saturated family in the $n$-dimensional Boolean lattice, denoted $\text{sat}^*(n, \mathcal{P})$, was first studied by Ferrara et al. (2017).

We are interested in improving the lower bounds for $\text{sat}^*(n, \mathcal{P})$. In particular, for the 4-point poset known as the diamond, we improve upon a logarithmic lower bound. For the antichain with $k + 1$ elements, we improve upon a previously known lower bound. (Received September 17, 2019)