

Saturation numbers for short hypergraph cycles

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Given two (k -uniform) hypergraphs \mathcal{H} and \mathcal{F} , we say that \mathcal{H} is \mathcal{F} -saturated if \mathcal{H} does not contain a copy of \mathcal{F} , but $\mathcal{H}+e$ does for any edge $e \in E(\overline{\mathcal{H}})$. The saturation number $\text{sat}_k(n, \mathcal{F})$ is the least number of edges in a k -uniform hypergraph on n vertices that is \mathcal{F} -saturated. Saturation numbers for graph cycles has proven to be a rich and difficult topic of study, with exact results only known for very short cycles and spanning cycles. In hypergraphs, even less is known about saturation for cycles. In this talk, we will delve into the saturation function for the 3-uniform loose 3-cycle.