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Arindam Banerjee* (123.arindam@gmail.com), , India, and **Selvi Kara Beyarslan** and **Huy Tai Ha**. *Regularity of powers of edge ideals: from local properties to global bounds.*

In this talk we shall discuss a recent joint work with Selvi Kara Beyarslan and Huy Tai Ha. Let $I = I(G)$ be the edge ideal of a graph G . We give various general upper bounds for the regularity function $\text{reg } I^s$, for $s \geq 1$, addressing a conjecture made by the authors and Alilooee. When G is a gap-free graph and locally of regularity 2, we show that $\text{reg } I^s = 2s$ for all $s \geq 2$. This is a slightly weaker version of a conjecture of Nevo and Peeva. Our method is to investigate the regularity function $\text{reg } I^s$, for $s \geq 1$, via local information of I . (Received September 02, 2018)