

Michigan Math Club



Thursday at 4pm in EH1360
Pizza + pop outside afterwards!!

The sum-product problem

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Let A be a finite set of real numbers, and consider the sets

$$A + A = \{a + a' : a, a' \in A\}$$

and

$$AA = \{aa' : a, a' \in A\}$$

of the sums and products of elements in A , respectively. Must at least one of $A + A$ or AA be “large” compared to A ? This is the sum-product problem. I will give an introduction to (and a precise statement of) the sum-product problem, which was posed by Erdős and Szemerédi in 1938, and an overview of the techniques that have been used to attack it.

