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Jozsef Solymosi* (solymosi@math.ubc.ca), 1984 Mathematics Road, Vancouver, BC V6T1Z2, Canada. *Triangulations in high dimensions and the sum-product problem.*

An old conjecture of Erdos and Szemerédi states that if A is a finite set of integers then the sum-set or the product-set should be large. The sum-set of A $A + A = \{a + b | a, b \in A\}$ and the product set are defined in a similar way, $AA = \{ab | a, b \in A\}$ Erdos and Szemerédi conjectured that the sum-set or the product set is almost quadratic in the size of A . In this talk we survey the results including some recent progress on the conjecture where discrete and convex geometry is used. (Received August 13, 2008)