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**Endre Szemerédi\***, 110 Frelinghuysen Road, Piscataway, NJ 08854-8019, and **Jozsef Solymosi**.

*Convexity and sumsets*. Preliminary report.

Let  $B = \{b_1 < b_2 < \dots < b_n\}$  an increasing sequence of real numbers and suppose that  $b_i - b_{i-1} < b_{i+1} - b_i$  for any  $1 < i < n$ . We call such sequences *convex*. Erdős conjectured that convex sequences have large difference (and sum) sets. Elekes, Nathanson, and Ruzsa proved that  $|B - B| \geq c|B|^{3/2}$ . It is not known if  $|B - B| \geq c|B|^{2-\varepsilon}$  holds for convex sequences or not. In this talk we show that there is a constant  $\delta > 0$  such that for any convex sequence  $B$   $|B - B| \geq c|B|^{3/2+\delta}$ . (Received September 15, 2009)