Sets with perfect power shifted products

Lajos Hajdu

Diophantine sets, i.e. sets A with the property that $ab + 1$ is a perfect square for all distinct $a, b \in A$, have a long history and a broad literature. In the talk we present results concerning the related problem where for all distinct $a, b \in A$, the shifted products $ab + n$ should be perfect powers (possibly having different exponents) for some fixed value of n. Among others, we show that the size of a set A having this property cannot be bounded by an absolute constant. The new results presented are joint with Bérczes, Dujella and Luca.