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Additive and Multiplicative Sidon Sets

An additive Sidon set is a set which contains no non-trivial solutions to the equation $a + b = c + d$. Multiplicative Sidon sets are defined analogously. This talk considers a problem about Sidon sets with a sum-product flavour: for an arbitrary set of real numbers A , is it guaranteed that A contains a large additive or multiplicative Sidon set? In joint work with Audie Warren, we constructed a set which does not contain very large additive or multiplicative Sidon sets. I will discuss this construction and some other thoughts concerning this problem and similar ones.