# GENERALIZED THUE SEQUENCES

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A sequence is *Thue* or *nonrepetitive* if it does not contain a repetition of any length. In this talk we introduce a generalization of this notion. A $k$-subsequence of a sequence $S$ is a subsequence containing every $k$-th term of $S$. A $k$-*Thue sequence* is a sequence in which every $\ell$-subsequence, for $1 \leq \ell \leq k$, is also Thue.

We show that four symbols are enough to build a 2-Thue sequence of any length. Moreover, we prove that four symbols suffice also for circular 2-Thue sequences, with three exceptions. As a corollary, the tight bounds for total Thue coloring of paths and cycles are obtained.