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Section:

13. Combinatorics

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Combinatorics of a containment relation that generalizes Davenport–Schinzel sequences.

A finite sequence $u = a_1 a_2 \ldots a_k$ is *contained* in another sequence $v = b_1 b_2 \ldots b_l$ if v has a subsequence $b_{i_1} b_{i_2} \ldots b_{i_k}$ that differs from u only by an injective renaming of symbols. For example, *baba* is contained in 516641234. Let $\mathrm{Forb}(u)$ be sequences not containing u (D. –S. sequences are the sequences $\mathrm{Forb}(ababa\ldots)$). We discuss extremal and enumerative results and problems connected with the sets $\mathrm{Forb}(u)$ for various sequences u.

Reference: M. Sharir and P. K. Agarwal, *Davenport–Schinzel sequences and their geometric applications*, Cambridge University Press, 1995.

M. Klazar, Combinatorial aspects of Davenport–Schinzel sequences, *Discrete Math.* **165–166** (1997), 431–445.