

DENSITIES OF REGULAR LANGUAGES

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ABSTRACT. We define density of language S in language L as asymptotic probability that a randomly and uniformly chosen word of length n from L belongs to S . There are languages for which density does not exist. We show that the problem of checking whether one regular language has density in another regular language is decidable. We consider also cumulative densities, which are defined analogously but by choosing words of length at most n , and analyze the equivalency of both approaches.