

Regular approximations of factorial languages: what are they good for?

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JM2014 – September 2014

Abstract

Any factorial (i.e., closed under taking factors) language is uniquely determined by its set of minimal forbidden words, called antidictionary. By regular approximation of a factorial language we mean a superset of this language obtained by reducing the antidictionary to its finite subset consisting of all words up to a prescribed length. Thus, if a factorial language is given by some property of words, then its approximations consist of words locally satisfying the same property.

In the first part of lecture we survey some known results on the growth properties of factorial languages, obtained by means of regular approximations. In the second part we describe some new results, including the proof of Currie's conjecture on the weak circular repetition threshold.

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