

Formulas with reversal

Narad Rampersad *

n.rampersad@uwinnipeg.ca

Patterns in words have been studied extensively since the early work of Bean, Ehrenfeucht and McNulty, as well as Zimin. Recently, there has been some interest in the study of patterns with reversal. With Currie, we identified two patterns with reversal, namely xxx^R and xx^Rx , with the property that the growth of the number of binary words of length n avoiding each of these patterns is intermediate between polynomial and exponential. Currie and Lafrance subsequently classified the avoidability index of all binary patterns with reversal. Rather than study patterns, one can also study formulas, which generalize the notion of pattern somewhat. In recent work with Currie and Mol, we found examples of rather simple formulas with reversal that require large alphabets to avoid. We can also determine the avoidability of a large class of formulas with reversal. We will present an overview of this recent work.

*Department of Mathematics and Statistics, University of Winnipeg, 515 Portage Avenue, Winnipeg, MB R3B 2E9, CANADA