

We study pattern indices of double occurrence words (words where every symbol appears twice), which have applications to the analysis of genome rearrangement processes in certain ciliate species. Appearance of patterns as subwords, rather than as factors, has been applied to scrambling patterns in the scrambled genome of a ciliate species *O. trifallax*. We introduce the notion of a pattern index of a word, defined as the minimal number of “pattern reductions” that transform the word into the empty word, in order to measure the complexity of the word relative to a given set of patterns. We focus on two biologically-motivated pattern indices, the so-called pattern recurrence index and the nesting index, and present several results characterizing the relationship between these indices. We also compute the pattern recurrence index and nesting index of a particularly important type of words, so-called tangled cords, that have been identified in the scrambled genome of *O. trifallax*.