

Algorithms in Genome Research
Winter 2012/2013

Exercises

Number 6, Discussion: 30. November 2012

1. Give pseudocode for the algorithm at page 50 (second paragraph) for computing values $\kappa(\alpha)$ for prefixes α of the pattern.
2. Prove that the co-linear chaining algorithm works correctly even when there are tuples containing other tuples in T or in P , i.e., tuples of type (x, y, c, d) and (x', y', c', d') such that either $x < x' \leq y' < y$ or $c < c' \leq d' < d$ (or both).
3. Modify the co-linear chaining algorithm to solve the following variations of the ordered coverage problem.
 - a) Find the maximum ordered coverage of P such that all the tuples involved in the coverage must overlap in P .
 - b) Find the maximum ordered coverage of P such that the distance in P between two consecutive tuples involved in the coverage is at most a given threshold value α .
 - b) Find the maximum ordered coverage of P such that the distance in T between two consecutive tuples involved in the coverage is at most a given threshold value β .