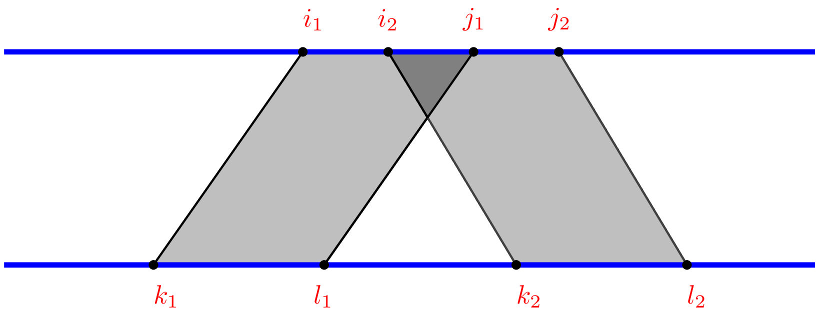
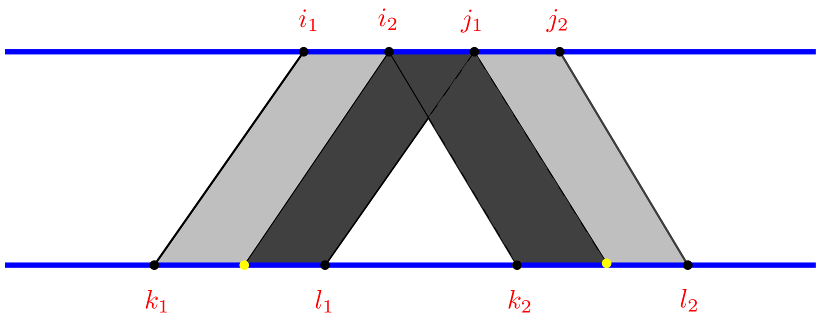
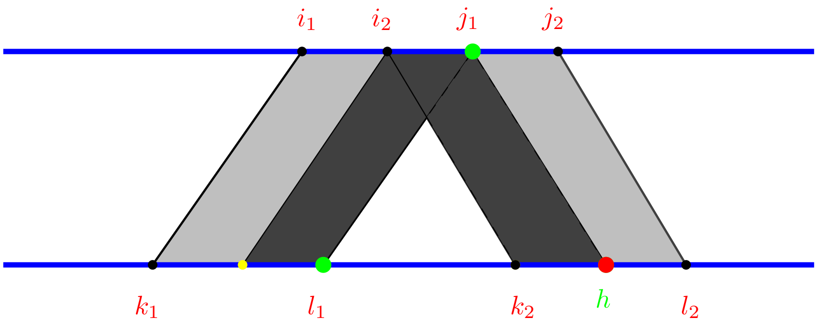
Given two segment matches and their minimal resolved refinement

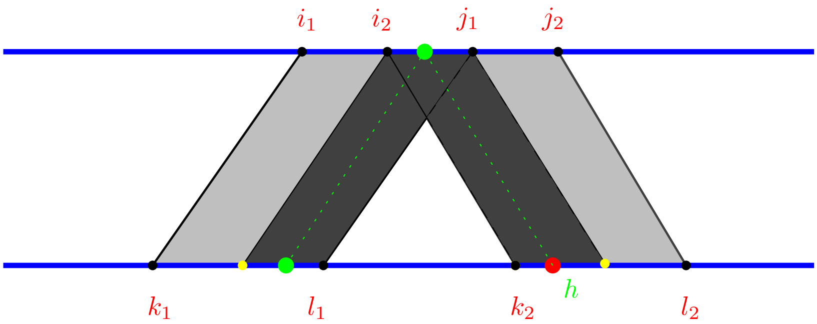




Assuming $supp_A(\Sigma_1) \neq supp_A(\Sigma_2)$

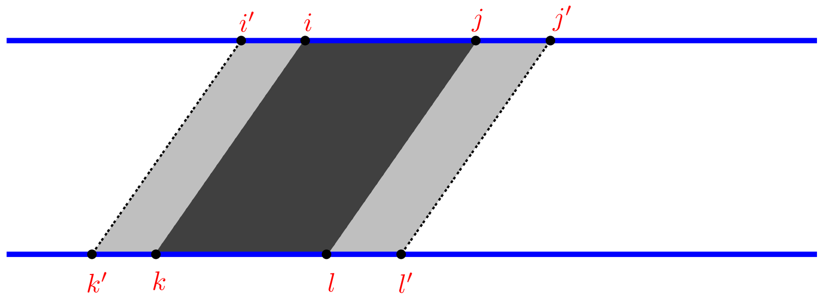


First case with green points denoting the basin of attraction. This contains nodes from the support set of Σ. Therefore if h is missing in some refinement (and therefore the edge (j_1, h)) then the matching would be unresolved because $[i_2, j_2] \cap supp_A(\Sigma) = \{i_2, j_1, j_2\}$.

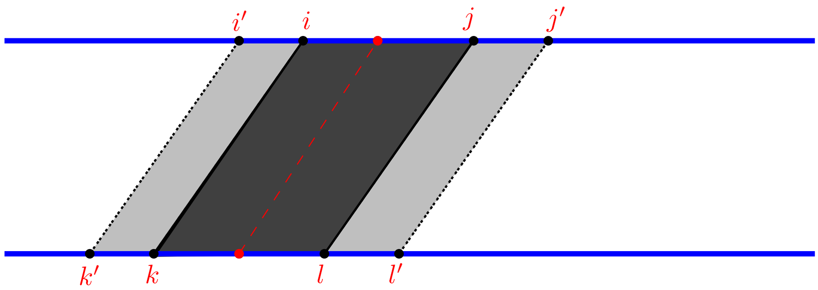


Second case with green points denoting the basin of attraction. This contains not any node from the support set of Σ. Therefore the refinement can be simplified by merging all segment matches seperated only by points in P_A and P_B. In this picture this corresponds to removing the green dotted edges.

Assuming $supp_A(\Sigma_1) = supp_A(\Sigma_2)$



Suppose that the dark grey segment match is contained in refinement Σ_1 but not in Σ_2. According to definitions there exists a match $S' \in \Sigma$ such that S ist a submatch of S'. Therefore there must be a projection of the intervall $[i, j]$ of sequence A to the intervall $[k, l]$ of sequence B.



Therefore in the refinement Σ_2 in order to have this projection without the segment match (A_{ij}, B_{kl}) there must exist submatches of $(A_{ij}, B_{kl}$. But according to the assumption $[i, j] \cap supp_A(\Sigma_1) = [i, j] \cap supp_A(\Sigma_2) = \{i, j\}$ and $[k, l] \cap supp_B(\Sigma_1) = [k, l] \cap supp_B(\Sigma_2) = \{k, l\}$. Therefore there cannot be any left of right position between i and j or k and l (red points) such that there cannot exist such a submatch. Therefore the segment match (A_{ij}, B_{kl}) must occur in Σ_2.