

Phylogenetic networks

Summer 2013

Assignment 6

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1. Not outer-labeled planar (3 points)

Consider the complete bipartite graph $K_{3,2}$ and assume that all its five nodes are labeled. Prove that it is not outer-labeled planar.

Do the same for the complete graph K_4 .

2. Application of neighbor-net (3 points)

Do a literature search to find a paper that uses neighbor-net to clarify evolutionary relationships. Briefly describe the aim of the paper, show the network and describe what point the authors make with help of the network.

3. Maximal circular networks (4 points)

Write a program that computes all circular splits for n taxa $x_1, \dots, x_n$ (using that ordering). Use SplitsTree4 to draw the corresponding outer planar split networks for $n = 4, \dots, 12$.

Due date: June 20, 2013