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ERABLE project

Title: « Reconciling phylogenetic trees »

Abstract:

In the cophylogeny reconstruction problem, the aim is to reconstruct the co-evolutionary history of host/symbiont systems. In this problem, we are given the phylogenetic tree of the hosts and the one of the symbionts together with an association of the leaves. The goal is to map the parasite tree to the host tree using four types of macro-evolutionary events (co-speciation, duplication, loss, host-switch). Given a cost for each of the events, we ask for the mapping that minimizes the total cost.

We present some problematic issues in the current combinatorial approach to cophylogeny studies together with the solutions we have proposed so far.

We will conclude with open problems.