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Geometry of Cophylogeny. Preliminary report.

A cophylogeny is a pair of phylogenetic trees satisfying some given conditions. Cophylogeny theory allows us to study two trees with related structure, such as a gene tree and a species tree, without assuming their independence. In this talk, we introduce several spaces of cophylogenies. We also give some combinatorial results about possible cophylogenies, in the case where one tree of the cophylogeny is a host tree and the other is a parasite tree. (Received February 10, 2009)