1136-92-145 **Hector Banos*** (hdbanoscervantes@alaska.edu). *Identifying species network features from gene tree quartets under the coalescent model.*

A phylogenetic tree is not always enough to describe the relationship between species, in particular, when hybridization, horizontal gene transfer or gene flow occurs. Phylogenetic networks are the objects used to represent the relationship between species that admit such events.

We focus on phylogenetic networks whose cycles do not share edges, known as level-1 networks. Under the coalescent model on a level-1 network, the probabilities of gene tree quartets can be computed in terms of the probabilities arising on simplified networks. Using only the natural descending order in the real line of such probabilities for each 4-taxon set, we can generically identify all cycles of size greater than 3, and hybrid nodes in the cycles of size greater than 4, in the unrooted species network. We also show that we cannot identify the hybrid node of a 4-cycle by this approach. (Received January 09, 2018)