## 1172-92-281 Magnus Bordewich, Charles Semple and Kristina Wicke\* (wicke.6@osu.edu). On the Complexity of Optimising Variants of Phylogenetic Diversity on Phylogenetic Networks.

Phylogenetic diversity (PD) is a prominent measure for quantifying the biodiversity of a set of species based on their evolutionary history and relatedness. Roughly speaking, the PD score of a group of species quantifies how much of the 'tree of life' is spanned by the species in the group. As evolution is not always tree-like and processes such as hybridisation or lateral gene transfer pose new challenges to biodiversity conservation, diversity measures beyond PD on phylogenetic trees are needed. Here, we introduce several natural variants of the PD score for a subset of species which are related by a known rooted phylogenetic network. Under these variants, we explore the computational complexity of, given a positive integer k, determining the maximum PD score over all subsets of species of size k when the input is restricted to different classes of rooted phylogenetic networks. (Received August 30, 2021)