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Laura Kubatko* (lkubatko@stat.osu.edu), 404 Cockins Hall, 1958 Neil Avenue, Columbus, OH 43210, and **Julia Chifman**. *Parameter Identifiability and Inference for Species Phylogenies Under the Coalescent*.

The rapid increase in availability of DNA sequence data coupled with gains in computational power have led to the use of increasingly complex models for inferring the evolutionary relationships among collections of species. These models have largely made use of the coalescent to capture the within-population dynamics of the speciation process along a phylogenetic tree. Though at least a dozen inference methods/software packages have been developed in this setting in the last 10 years, there has been little attention given to identifiability of model parameters. We have previously established identifiability of the species tree topology using techniques from algebraic statistics. We now extend our methodology to consider the estimation of parameters along that tree. In particular, we consider identifiability of the times of the speciation events along a fixed phylogeny. We apply our methods to both simulated and empirical data sets. (Received August 07, 2015)