**SUPPLEMENTARY MATERIAL**

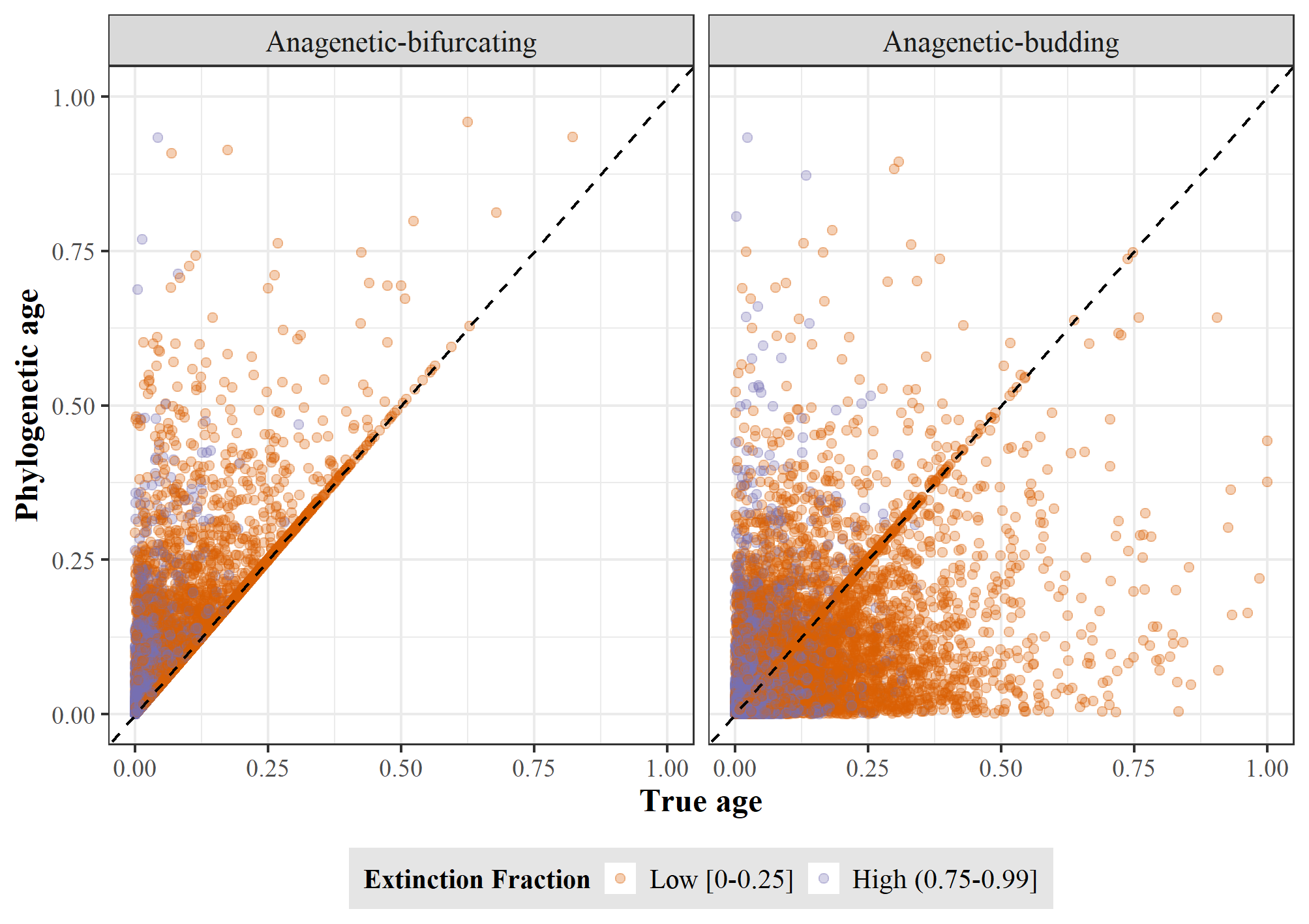
**Species age cannot be obtained from phylogenies under the birth-death model**

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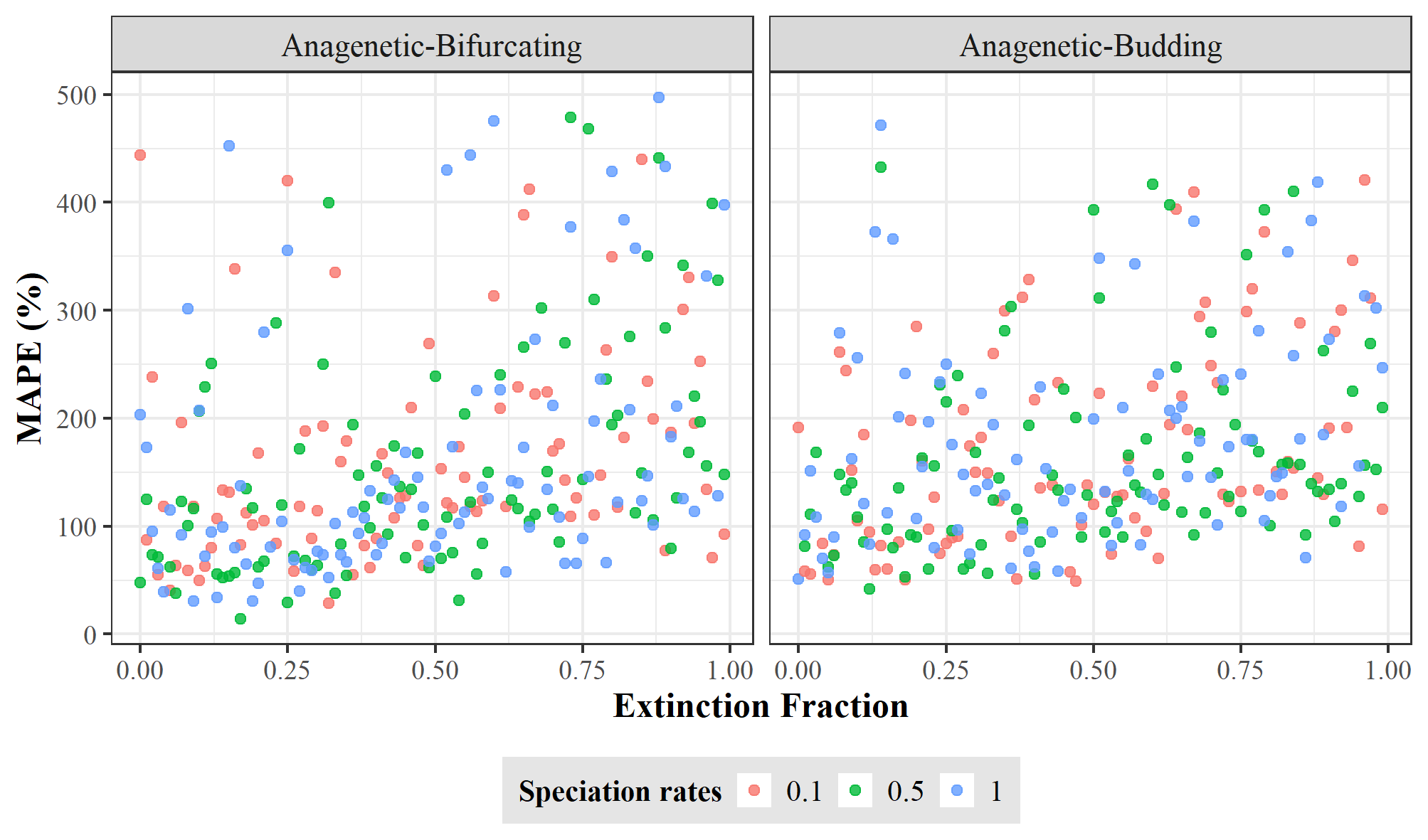
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**Figure S1.** True age versus phylogenetic age at low and high extinction fraction for Anagenetic-bifurcating (left) and Anagenetic-budding (right) speciation. Each point represents a species. True and phylogenetic ages are scaled to the root age of the correspondent phylogenetic tree.



**Figure S2.** Error in equating phylogenetic age with speciation age. The error was quantified as mean absolute percentage error (MAPE) between the true and phylogenetic ages across all species for each tree simulated under Anagenetic-bifurcating (left) and Anagenetic-budding speciation (right). Each dot represents one replicate of the 300 trees for each speciation mode using different rates of speciation and extinction fraction.