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Cashous Bortner, Elizabeth Gross and Nicolette Meshkat*, 500 El Camino Real, Santa Clara, CA 95053, and **Anne Shiu and Seth Sullivant**. *Identifiability of linear compartmental tree models.*

A foundational question in the theory of linear compartmental models is how to assess whether a model is identifiable – that is, whether parameter values can be inferred from noiseless data – directly from the combinatorics of the model. We completely answer this question for those models (with one input and one output) in which the underlying graph is a bidirectional tree. Such models include two families of models appearing often in biological applications: catenary and mammillary models. In order to prove this, we give the first general formula for the coefficients of input-output equations (certain equations that can be used to determine identifiability). We also prove that identifiability is preserved when a model is enlarged in specific ways involving adding a new compartment with a bidirected edge to an existing compartment. (Received September 18, 2021)