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Seth Gerberding* (seth.gerberding@coyotes.usd.edu), 414 E. Clark Street, Vermillion, SD 57069. *Preserving Identifiability in Linear Compartmental Models.*

In this talk, we address linear compartmental model identifiability, and prove several cases where changing a model preserves identifiability. We focus primarily on the *cycle model*, and prove several results. But first, we prove a conjecture from earlier work holds for certain models. Then, we prove that a cycle model, with one input, one output, and one leak, *in any compartment* is generically locally identifiable. Next, we prove that adding certain edges to cycle models also preserves identifiability. We do so by introducing two “hybrid” models, the Fin model and the Wing model, then prove that removing certain edges preserves identifiability. Our proofs are aided by results on elementary symmetric polynomials and the theory of input-output equations for linear compartmental models. (Received September 10, 2019)