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**Necibe Tuncer\***, ntuncer@fau.edu, and **Kristof Nemeth**, knemeth1@fau.edu. *Identifiability Analysis in Mutli-Scale Models*. Preliminary report.

We study the structural and practical identifiability of multi-scale models with multi-scale data. For multi-scale model, we consider nested within-host between-host models, where the within-host model is the immune response of the infected host, and between-host model is the time-since-infection structured SIR outbreak model. The epidemiological and immunological model are nested by linking the epidemiological parameters such as transmission and recovery rates to infected host's immune response. For mutli-scale data, we use CDC 2018-2019 Influenza H1N1data combined with H1N1 viremia data within-infected host. We present the structural and practical identifiability analysis of the multi-scale model. (Received January 21, 2020)