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Imelda Trejo* (imelda@lanl.gov), Theoretical Biology and Biophysics, Los Alamos National Laboratory, Los Alamos, NM 87545. *A modified Susceptible-Infected-Recovered model for observed under-reported incidence data.* Preliminary report.

Fitting Susceptible-Infected-Recovered (SIR) models to incidence data is problematic when a fraction q of the infected individuals are not reported. Assuming an underlying SIR model with general but known distribution for the time to recovery, we introduce a system of differential-integral equations to quantify the fraction of asymptomatic individuals during an epidemic outbreak. Using these equations, we develop a simple stochastic model for the observed incidence, and propose a Bayesian estimate of model parameters. We use our model to estimate the infection rate and fraction of asymptomatic individuals for the current Coronavirus 2019 outbreak in some European Countries. (Received August 25, 2020)