1077-92-2697   **Anna Mummert*** (`mummerta@marshall.edu`), Marshall Univeristy, Mathematics Department, One John Marshall Drive, Huntington, WV 25755. *Studying the recovery algorithm for the time-dependent transmission rate in epidemic models.* Preliminary report.

Determining the time-dependent transmission function that exactly reproduces disease incidence data can yield useful information about disease outbreaks, including a range potential values for the recovery rate of the disease and offers a method to test the "school year" hypothesis (seasonality) for disease transmission. Recently two algorithms have been developed to recover the time-dependent transmission function for classical disease models given the disease incidence data. We first review the recovery algorithm for the susceptible-infected-recovered (SIR) and susceptible-exposed-infected-recovered (SEIR) models. Second, we explore several technical issues that appear when implementing the algorithm for the SIR model; these are important when generating the time-dependent transmission function for real-world disease data. Finally, we apply the recovery algorithm to data from the 2009 - 2010 influenza season. For this flu season, we find that the transmission rate is not higher during the school year. Also, using the classical SIR model we find the average recovery rate must be less than 7.14 days. (Received September 22, 2011)