1107-92-157   **Ariel Cintron-Arias*** (`cintronarias@etsu.edu`), East Tennessee State University, Department of Mathematics and Statistics, Box 70663, Johnson City, TN 37614-0663. *Sensitivity Analysis and Treatment of Hepatitis C Virus Infection.* Preliminary report.

The interplay between types of immune responses, antibodies and CTL cells, is explored in the context of hepatitis C virus (HCV) infection. The competition between these immune system cells for HCV (necessary for their survival) is explored with sensitivity analyses, considered under three main steady states: co-existence, dominant CTL response, and dominant antibody response. Use of relative sensitivity functions allows temporal ranking of parameters, in relation to their degree of influence in viral load. Moreover, time subintervals where model parameters provide most information are also recorded. Parameter sensitivity is factored in the formulation of an optimal control problem, with the ultimate goal of addressing treatment. Comparisons between regimes with and without treatment are discussed. (Received January 12, 2015)