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Anne Catlla* (catllaaj@wofford.edu), 429 North Church Street, Spartanburg, SC 29303, and **Stanca Ciupe, Jonathan Forde** and **David Schaeffer**. *Stability analysis of a model of host-pathogen interaction during hepatitis B infection*. Preliminary report.

Hepatitis B is a virus that infects liver cells (hepatocytes) and leads to either acute (short-term) or chronic (long-term) liver disease. In previous work a model describing the interactions between infected hepatocytes, uninfected hepatocytes, recovering hepatocytes that are immune to reinfection, immune system cells, and virus was developed and analyzed numerically. We simplify this model via a quasi-steady state approximation so that it may be studied analytically. The simplified system has steady states corresponding to the healthy state where all hepatocytes are uninfected, to chronic infection where some hepatocytes are infected, and to liver death (the trivial state). We derive conditions that guarantee local and global stability of the healthy state. We show numeric results supporting our stability findings and discuss the biological implications of these findings. (Received February 10, 2009)