1062-00-208   **Erik M Bollt*** (`bolltem@clarkson.edu`), Clarkson University, Department of Mathematics, Potsdam, NY 13699-5815, and **Aaron Luttman**. *Data Mining Remotely Sensed Image Sequences and Transport Analysis of Spatiotemporal Dynamical Systems.*

A broad range of scientific fields, such as climatology, oceanography, and fluid dynamics produce large data sets in the form of digital images or continuous-time, spatiotemporal video data from remotely sensed hyperspectral satellite data. There have been terrific advancements in variational methods for image processing, and likewise in dynamical systems, there have been tremendous advancements in analyzing transport in complex spatiotemporal dynamical systems. Nonetheless, there has been little specialization of the methods of image processing to develop techniques specifically suited to the complex dynamical systems typical of fluid systems, and the tools of dynamical systems have not been brought to bear on data inferred directly from movies. The Frobenius-Perron operator for a dynamical system known allows transport modeling and phase decomposition into almost invariant sets. A particular application which interests us is remotely sensed ecological systems such as biological products including algae blooms, from which we will discuss modeling, transport analysis, and filtering. (Received August 09, 2010)