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Izabel Aguiar*, izabel.p.aguiar@gmail.com, and **Paul Constantine**. *Dynamic Active Subspaces*. Preliminary report.

This research explores the concepts of parameter space dimension reduction for dynamical systems using by extending active subspaces to dynamical systems. Analysis, dynamic mode decomposition (DMD), sparse identification for nonlinear dynamic systems (SINDy), and other methods are implemented to discover and reconstruct active subspaces for time dependent systems. Such methods allow us to build dynamical systems that model parameter sensitivity over time for a specific state of the original system. (Received August 29, 2017)