1056-93-1258   **John M Davis*** (`John_M_Davis@baylor.edu`), Department of Mathematics, Baylor University, Waco, TX 76638. *Lyapunov-Based Methods for Designing Stable Switched Systems.* Preliminary report.

Using algebraic and dynamic Lyapunov methods, we investigate two paradigms for designing stable switched systems: (1) when given a compact family of pairwise commuting stable matrices but the underlying graininess is a parameter, and (2) when a finite set of graininesses is specified for a single system which is discretized over the set. We compare and contrast the results and techniques in each situation and take a glimpse at associated converse Lyapunov theorems in these directions. (Received September 21, 2009)