Meeting: 998, Houston, Texas, SS 22A, Special Session on Mathematical Problems in the Analysis of Synchronous States in Networks

998-93-335 **R Femat*** (rfemat@ipicyt.edu.mx), Apdo. Postal 3-90, San Luis Potos, 78231 San Luis Potos, S.L.P., Mexico, and **L Kocarev** and **M. E. Monsivais-Pérez**. *Towards Generalized Synchronization on Strictly Different Chaotic Systems.* Preliminary report.

Synchronization of chaotic systems is an interesting topic that has caught the attention of the nonlinear science community. Some efforts have been done to synchronize chaotic systems with different model. The underlying idea is to find a synchronization force such that the existence of a synchronization manifold exists. Several synchronization phenomena can be found, and different techniques have been exploited. Here we analyze the GS of strictly-different chaotic systems departing from the synthesis problem. We consider chaotic systems with different model having a triangular form. Such a triangular form can be (i) a natural form of the systems or (ii) derived from Lie-based transformation of the dynamical systems in affine form $\dot{x} = f(x) + \Sigma_{j=1}^{n} g_j(x) u_j$; where $f(x)$ and $g(x)$ are smooth vector fields and u denotes the synchronization force (see Appendix). Thus, the main idea is to integrate the analysis and synthesis problems towards understanding the GS in strictly different chaotic systems. Our goals are, on the one hand, synthesized feedback controllers for achieving synchronization and, on the other hand, analyze the properties of the synchronization for feedback-based schemes. (Received March 01, 2004)