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Kimberly D. Ayers* (kdayers@iastate.edu). *Graph Determined Symbolic Dynamics and Hybrid Systems.*

In this research we explore the concept of symbolic dynamical systems whose structure is determined by a directed graph, and then discrete-continuous hybrid systems that arise from such dynamical systems. Typically, symbolic dynamics involve the study of a left shift of a bi-infinite sequence. We examine the case when the bi-infinite system is dictated by a graph; that is, the sequence is a bi-infinite path of a directed graph. We then use the concept to study a system of dynamical systems all on the same compact space M , where “switching” between the systems occurs as given by the bi-infinite sequence in question. The concepts of limit sets, chain recurrent sets, chaos, and Morse sets for these systems are explored. (Received September 12, 2014)