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David S. Richeson* (richesod@dickinson.edu), Department of Mathematics and Comp Sci, Dickinson College, Carlisle, PA 17013, and **Jim Wiseman** and **Fabio Drucker**. *Symbolic dynamics from partitions with overlapping elements*. Preliminary report.

Let X be a compact metric space, $f : X \rightarrow X$ be a continuous map, and $\{N_1, \dots, N_n\}$ be a collection of nonempty compact sets. We say that (s_0, s_1, \dots) is an *itinerary* for a point x if $f^i(x) \in N_{s_i}$ for all i . In the classical case of a Markov partition, the sets N_i overlap only on their boundaries and map across each other nicely under f ; in this case the itineraries give symbolic dynamics in the form of a subshift of finite type. In this work we study the case where the sets N_i can overlap nontrivially and can map across each other in more complicated ways. We discuss methods for extracting useful information about the dynamics of f (such as a nonzero lower bound for the topological entropy) from the itineraries. (Received September 21, 2010)