

1023-37-1889

Rodrigo Trevino* (rodrigo@math.utexas.edu), Department of Mathematics, 1 University Station C1200, Austin, TX 78712-0257, and **Rafael Frongillo**. *Algorithms for Rigorous Symbolic Dynamics and Topological Entropy*.

We introduce a method of constructing symbolic dynamics for a map $f : X \rightarrow X \subset \mathbb{R}^n$ that does a good job of capturing complicated dynamics. More precisely, we construct a symbol space and prove there is a semi-conjugacy between the map and a subshift of finite type on the symbol space. This allows us to give a lower bound of the topological entropy of the original map and our goal is to construct the symbolic dynamics in such a way to get a high lower bound. The method is algorithmic and, although it is computational, yields rigorous results. As an illustration we apply our method to the Hénon map to give a new lower bound for the topological entropy much higher to the previous lower bound and very close to the believed experimental value. (Received September 27, 2006)