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Exact topological entropy for some non-hyperbolic maps.

In fluid mechanics, the topological entropy is a useful measure of the effectiveness of mixing devices. The entropy can be bounded from below by looking at a few periodic orbits. Moreover, there are cases where this bound appears to be sharp, based on numerical simulations. To simplify the system, we study classical "linked twist maps" to isolate features that make the bound exact. The crucial ingredient is to be the manner in which folding occurs in the map. The hope is that these observations can be applied to estimate the entropy of real physical systems. (Received February 11, 2010)