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Univeristy, Fairfield, CT 06824. *Zero-entropy vertex maps for graphs*. Preliminary report.

Let G be a finite connected graph with v vertices. Vertex maps are maps $f : G \rightarrow G$ that are homotopic to the identity, are locally monotonic on edges and such that the vertices form a periodic orbit. The talk will outline a classification of all zero-entropy vertex maps. In particular we will show that if $\chi(G) = 1$, there exists an integer $n \geq 0$ such that $v = 2^n$ and $Per(f) = \{1, 2, 2^2, \dots, 2^n\}$; if $\chi(G) = 0$, there exists a positive integer k and an integer $n \geq 0$ such that $v = k \cdot 2^n$ and $Per(f) = \{k, k \cdot 2, k \cdot 2^2, \dots, k \cdot 2^n\}$; and if $\chi(G) < 0$, there exists a positive integer k and an integer $n \geq 0$ such that $v = k \cdot 2^n$ and $Per(f) = \{1\} \cup \{k, k \cdot 2, k \cdot 2^2, \dots, k \cdot 2^n\}$; where $\chi(G)$ denotes the Euler characteristic of G and $Per(f)$ denotes the set of periods of the periodic points of f . (Received August 08, 2005)