Title: Entropy of Lyapunov-optimizing measures of some matrix cocycles

Abstract: I'll present my work with Jairo Bochi on the products of $GL(2,R)$ matrices. Setting: given a finite set of $GL(2,R)$ matrices $\{A_i\}_{i=1}^k$, we consider for all possible sequences $\omega \in \{1,\dots,k\}^N$ the maximal Lyapunov exponent

$$\lambda(\omega) = \lim_{n\to\infty} (1/n) \log ||A^{(n)}(\omega)||,$$

where $A^{(n)}(\omega) = A_{\omega_n} \cdot \ldots \cdot A_{\omega_1}$. We investigate the interval $[\lambda_-, \lambda_+]$ of possible values of λ. We prove that under specific assumptions (domination + nonoverlapping) the extremal values of λ are attained, thus there exist invariant measures on $\{1,\dots k\}^Z$ with Lyapunov exponents λ_- or λ_+, but all those measures have zero entropy. Contrary to that, at least in the $SL(2,R)$ case, without domination it is an open and dense property for the invariant measures with maximal Lyapunov exponent equal to λ_- to have positive entropy.