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**Continuity properties of Lyapunov exponents**

Our aim is to explain how to control Lyapunov exponents using entropy for smooth surface diffeomorphisms. We will follow recent joint works with Sylvain CROVISIER and Omri SARIG. Our approach is to compute the entropy of measures in terms of the expansion of smooth unstable curves using reparametrizations à la Yomdin. The key is to relate the possible drop in the Lyapunov exponent in the limit to “near” homoclinic tangencies. Those “near” tangencies prevent the expansion of the unstable curves during long time intervals. Our main result will follow.

Our exposition will be geared to students and researchers in dynamics that are not necessarily very familiar to smooth ergodic theory. We shall start by explaining the fundamental results that we will need, before turning to our main estimates, and discussing and proving our main result. If time permits, we will then explain some of the consequences of this result (a spectral gap property for measures maximizing the entropy) or these methods (a construction of Sinai-Ruelle-Bowen measures).