

## (Dis)continuities of Lyapunov exponents

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Let  $f$  be a  $C^\infty$  surface diffeomorphism with positive topological entropy, and let  $\mu_n$  be a sequence of ergodic invariant measures which converge weak star to an ergodic limiting measure  $\mu$  with positive entropy.

We show that if the entropies of  $\mu_n$  converge to the entropy of  $\mu$ , then the Lyapunov exponents of  $\mu_n$  converge to the Lyapunov exponents of  $\mu$ .

If the entropies of  $\mu_n$  do not converge to the entropy of  $\mu$ , then the Lyapunov exponents of  $\mu_n$  may not converge to the Lyapunov exponents of  $\mu$ . In this case, we relate the discontinuity in entropy to the discontinuity in Lyapunov exponents.

This is joint work with J. Buzzi and S. Crovisier.