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## BACH Seminar

### Transition to chaos for surface dynamics

Freitag, 10. Juli 2020  
10:30 Uhr – per Zoom

**Sylvain Crovisier**  
(Paris-Saclay)

#### Abstract:

Topological entropy measures the complexity of a dynamical system. In the case of surface diffeomorphisms, a strictly positive entropy is associated with the existence of "horseshoes": the dynamics is then very rich (chaotic). In this talk, I will focus on surface diffeomorphisms with zero entropy: can the dynamics of these 'simple' systems be described? how does it bifurcate to positive entropy systems? These questions will be answered for a class of volume-contracting surface diffeomorphisms whose dynamics is intermediate between one-dimensional dynamics and general surface dynamics. It includes the dynamics of any Hénon diffeomorphism with Jacobian smaller than  $1/4$ . In particular, with E. Pujals and C. Tresser, we have obtained a two-dimensional version of Sharkovsky's theorem about the set of periods of interval maps.

Guests are very welcome!