Dr. Corinna Ulcigrai

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Corinna Ulcigrai is a professor at Institute for Mathematics of the Universität Zürich, Switzerland. She grew up in Trieste, Italy and studied at Scuola Normale Superiore in Pisa. She obtained her PhD in Mathematics at Princeton University (USA). From 2008 to 2018 she worked at the School of Mathematics at the University of Bristol in the UK, where was initially hired as a research fellow and later became a full professor.

Ulcigrai's research is in the area of dynamical systems and ergodic theory. Her research focusses on the mathematical investigation of chaos, in particular systems which are slowly chaotic or parabolic. She has in particular studied dynamical and chaotic properties of polygonal billiards and flows on surfaces. For her achievements, Corinna Ulcigrai was awarded several prizes, including the European Mathematical Society prize, the Whitehead Prize, the Leverhulme Prize and the Brin Prize for Dynamical Systems. She was the receipient of an ERC Starting Grant and currently holds a SNSF Consolidator grant. Corinna Ulcigrai was a also a invited speaker at the International Congress of Mathematicians in 2022, in the Dynamical Systems session.

Title: Slow chaos and deviations phenomena for surface flows

Abstract: This talk will focus on locally Hamiltonian flows on surfaces, namely smooth twodimensional flows which are local solution of Hamiltonian differential equations. The study of these flows and their extensions dates back to Poincare and is still an active topic of research, in particular since flows on surfaces provide a fundamental model of slowly chaotic systems. We will present a survey of results concerning the chaotic properties, in particular mixing properties and slow chaos features, for this class of flows. We will then also discuss the deviations phenomena exhibited by ergodic integrals of smooth functions.