

FIM

Minicourse

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Polygonal billiards and Teichmüller dynamics

Mondays, October 22, October 29 and November 5, 2012

10:00 - 12:00, HG G 43

ETH Zürich, Rämistrasse 101

Abstract

The mini-course will provide a gentle and self-contained introduction to polygonal billiards and Teichmüller dynamics, a rich area of research which has developed and bloomed in the last decades. In a mathematical billiard a particle moves without friction in a planar domain bouncing elastically at the boundary. Many deep results on the ergodic properties of (rational) polygonal billiards exploit the beautiful connection with the geometric and dynamical properties of the Teichmüller geodesic flow on the moduli spaces of translation surfaces. In particular, we will present the proof of one of the classical results which exemplifies the above philosophy, Kerkhoff-Masur-Smillie theorem on unique ergodicity for rational billiards.

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