Quantum ergodicity in pictures

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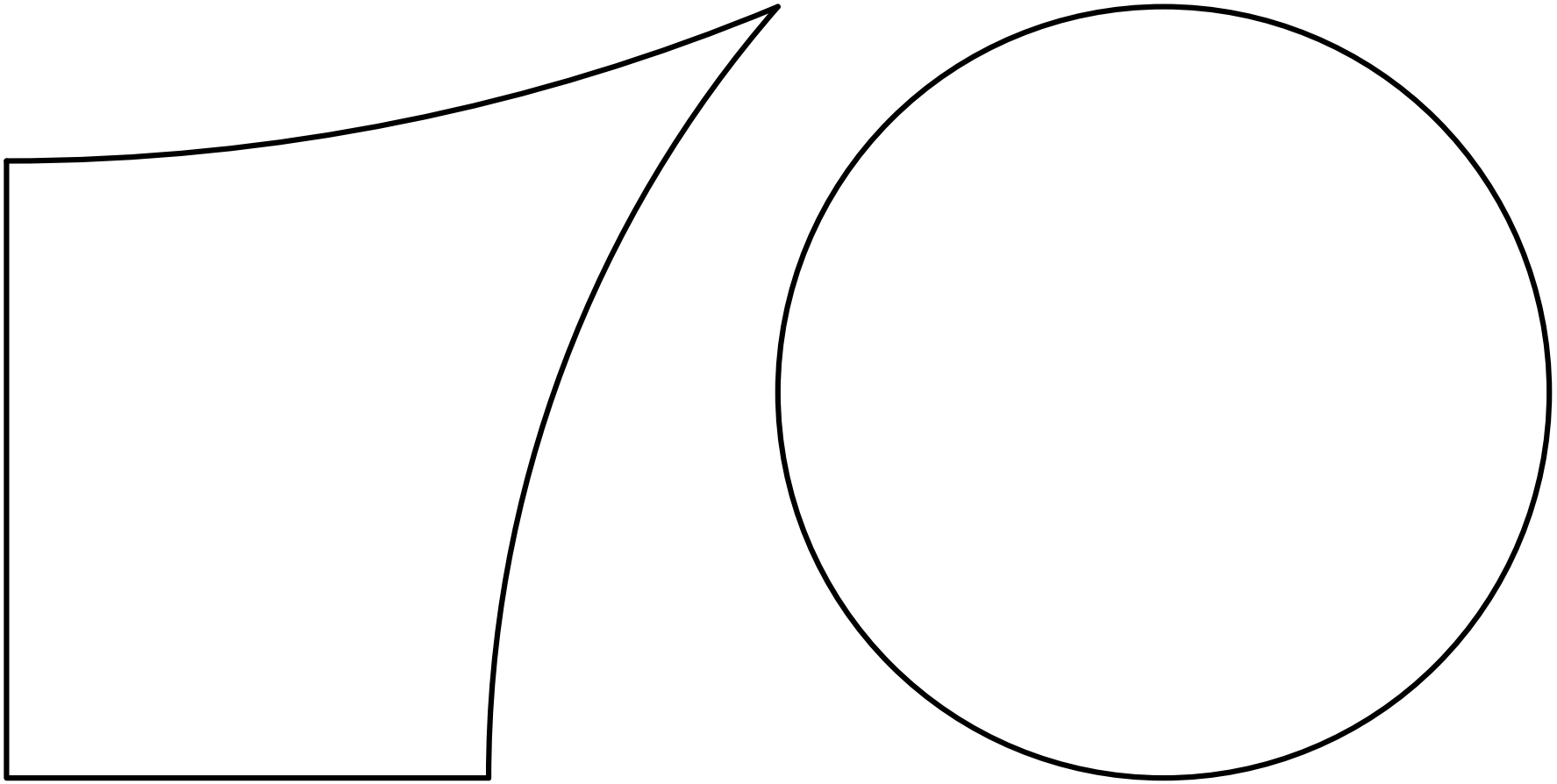
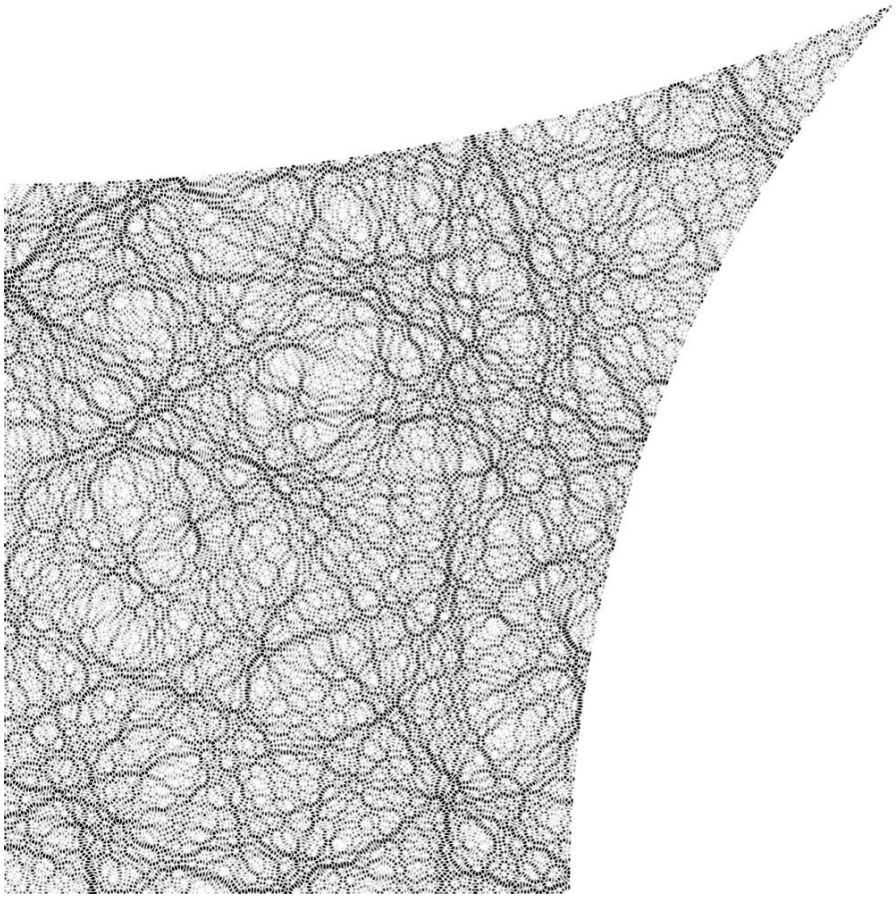
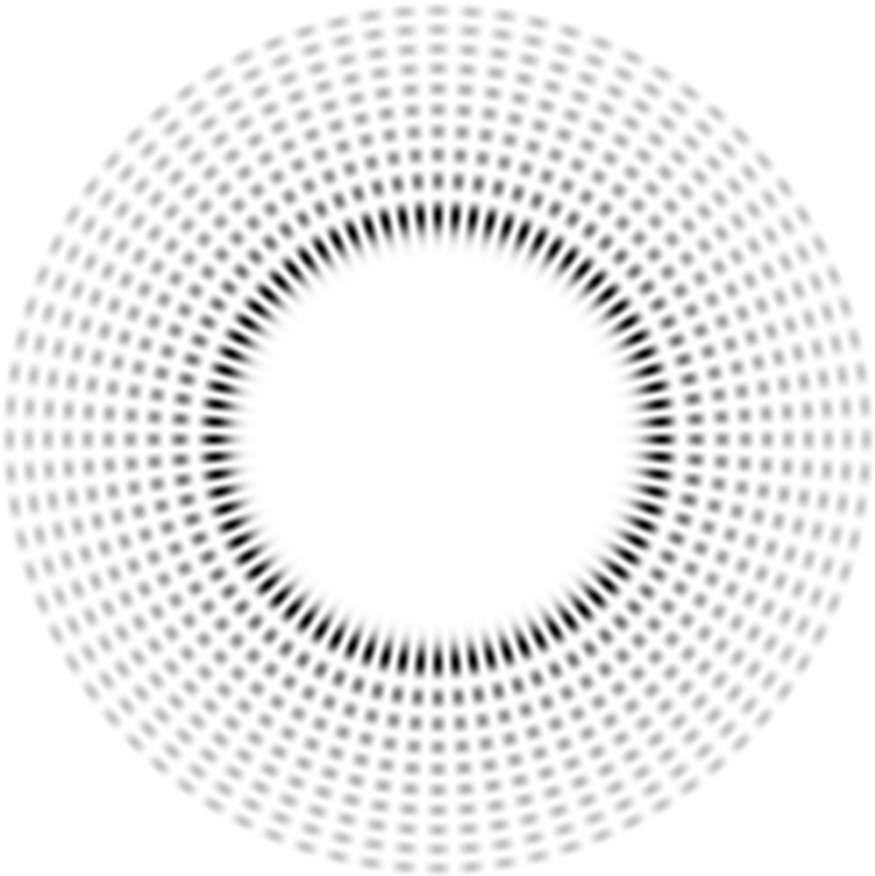
Two planar domains



Two planar domains

Eigenfunction concentration
(picture on the left by Alex Barnett)





Equidistribution

No equidistribution

Two planar domains

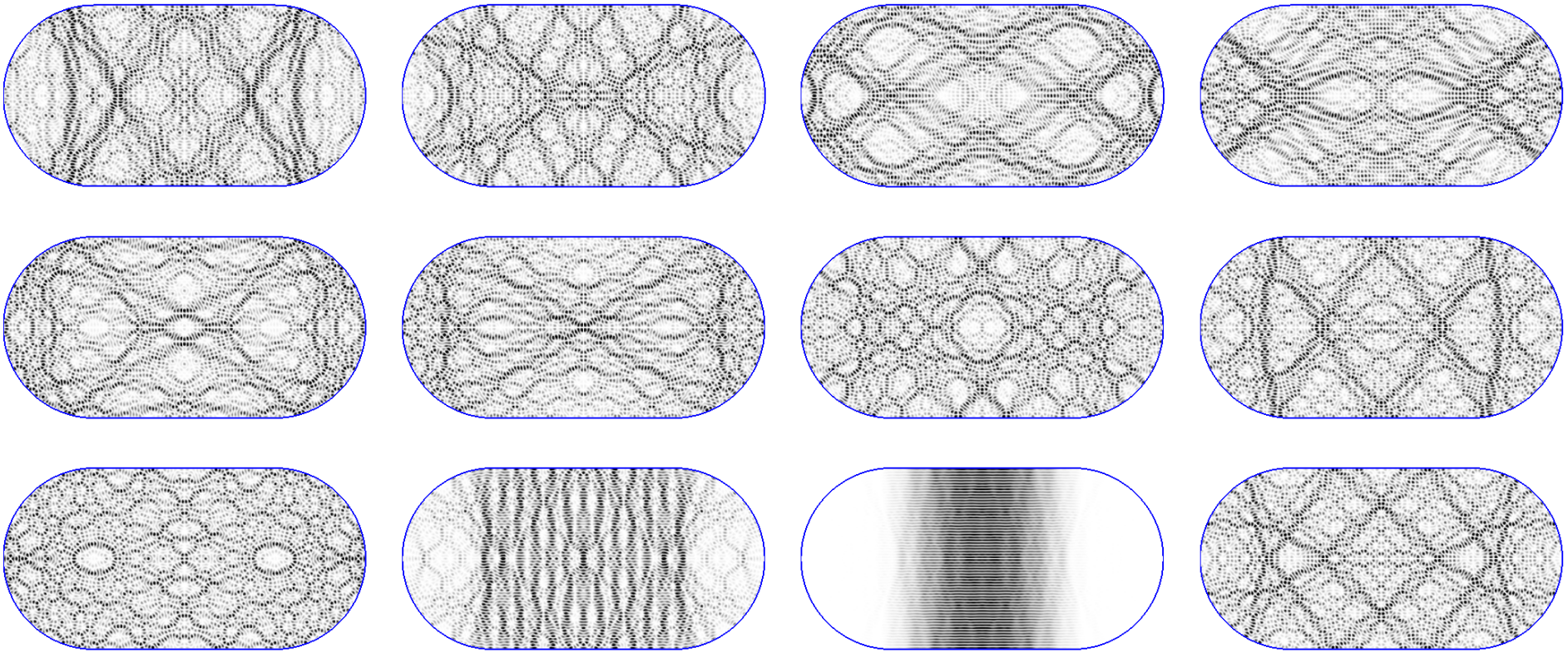
Billiard ball dynamics

Ergodic

Completely integrable

Bunimovich stadium (pictures by Alex Barnett)

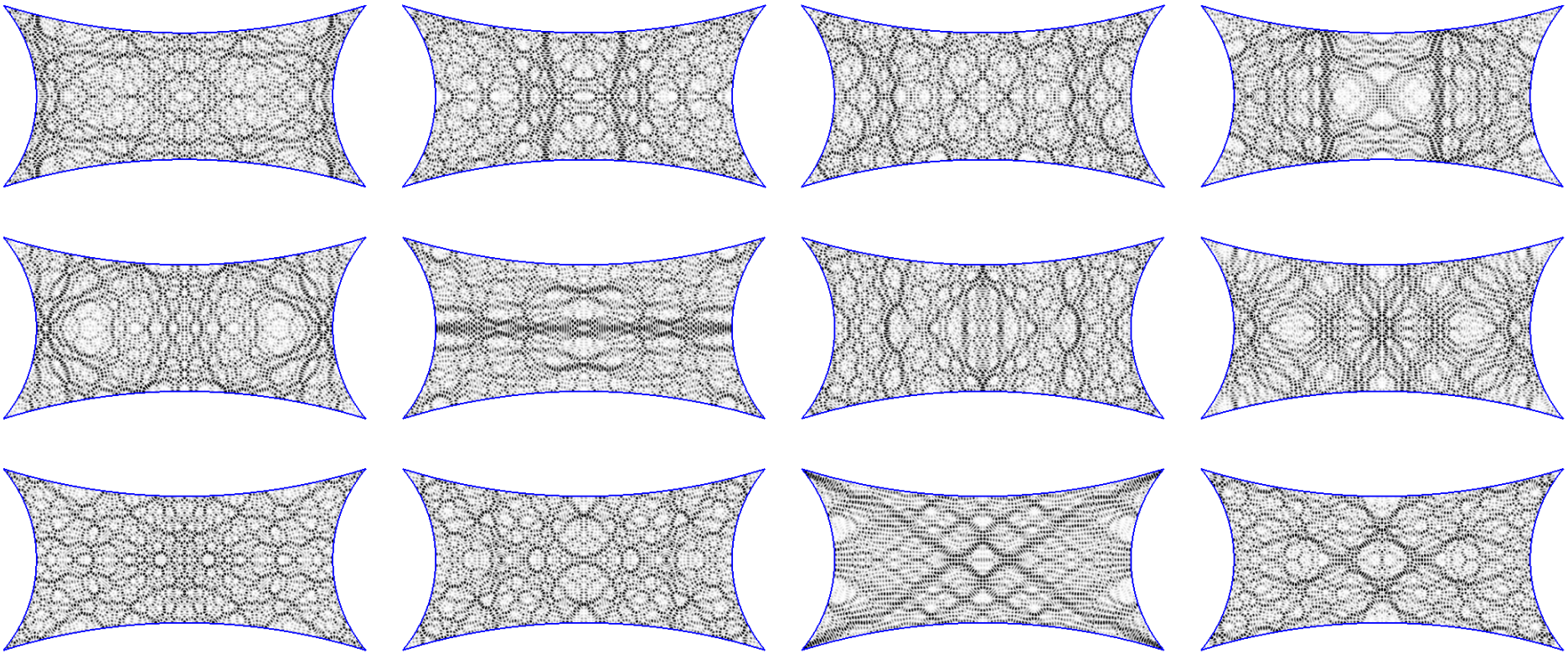
Ergodic but not strongly chaotic (vertical trajectories not hyperbolic)



Quantum Ergodicity holds, Quantum Unique Ergodicity fails [Hassell '10]

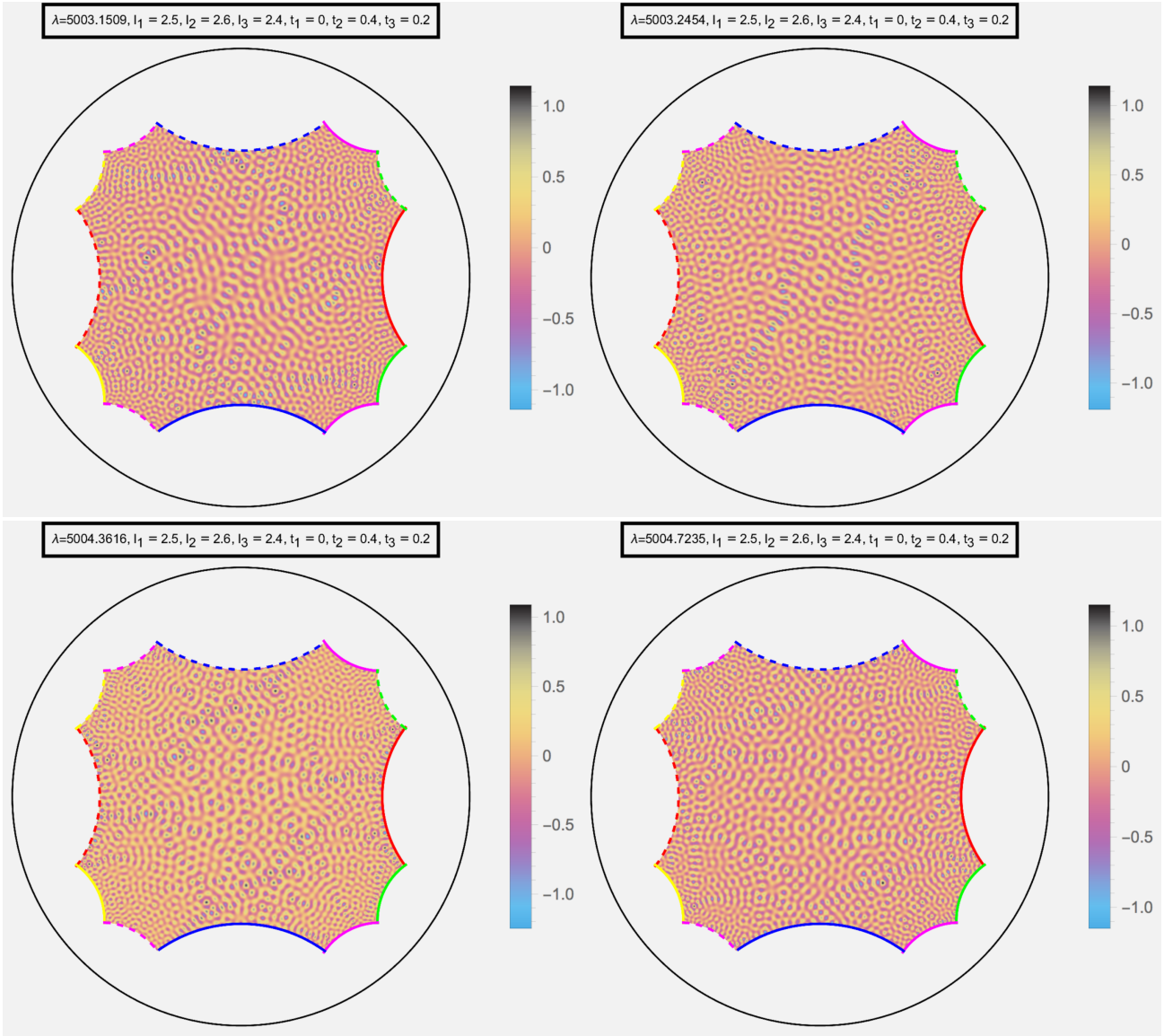
Another chaotic billiard (pictures by Alex Barnett)

Strongly chaotic



Quantum Ergodicity holds, Quantum Unique Ergodicity conjectured

A hyperbolic surface (pictures by Alex Strohmaier)



Now, time for a movie...