MAT 742 – Seminar on Hyperbolic Geometry

- **Audience:** BSc and MSc students
- **Prerequisites:** Topology/Geometry *or* Elements of Topology and Elements of Geometry
- **Language:** English
- **Time:** Monday 10-12
- **Instructor:** Yuriy Tumarkin

What is hyperbolic geometry?

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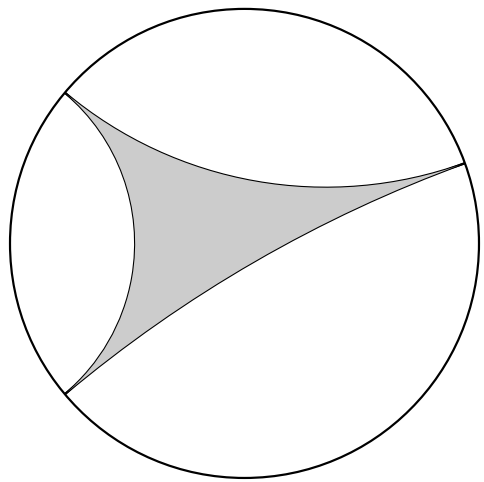

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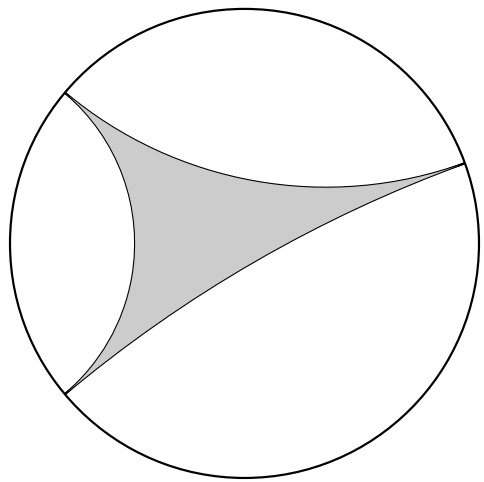

János Bolyai:

"I have discovered such wonderful things that I was amazed ... out of nothing I have created a strange new world"

Postcard 0: Example of a hyperbolic surface

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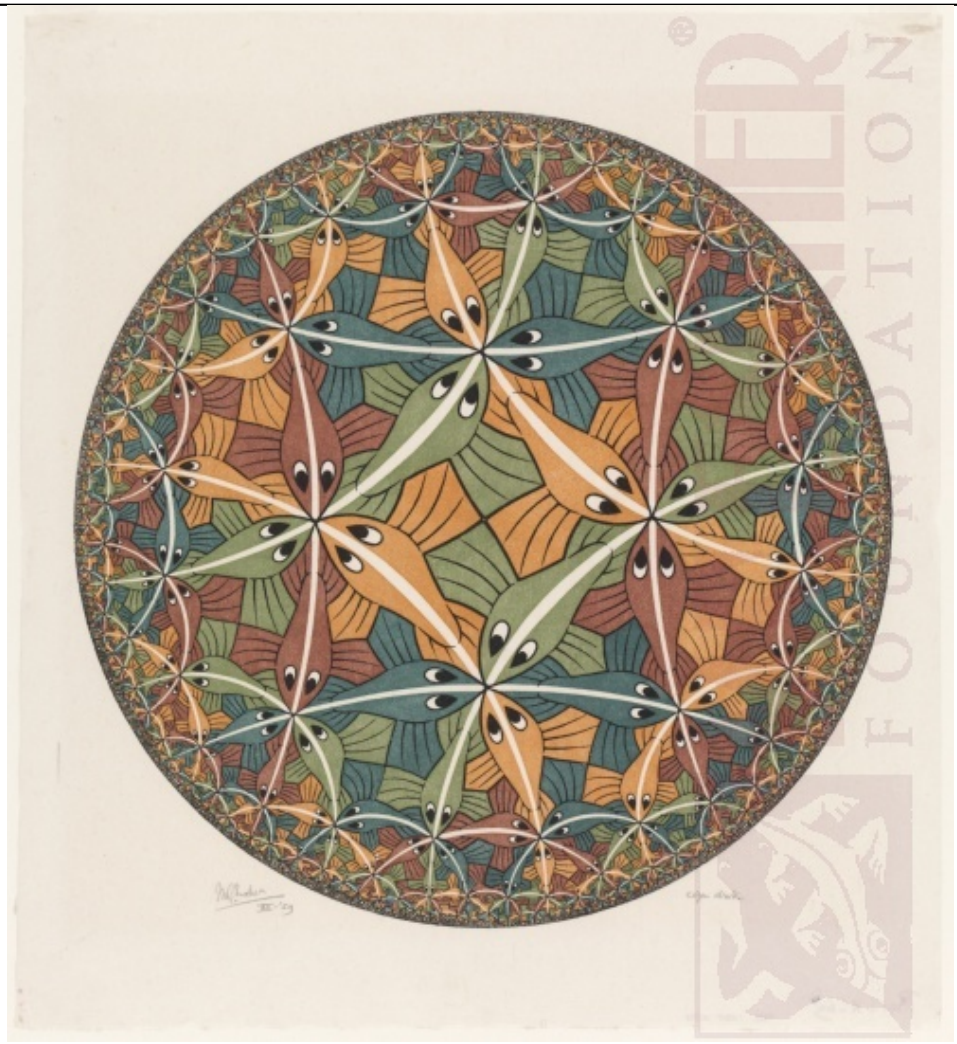
Postcard 1: Fuchsian Groups



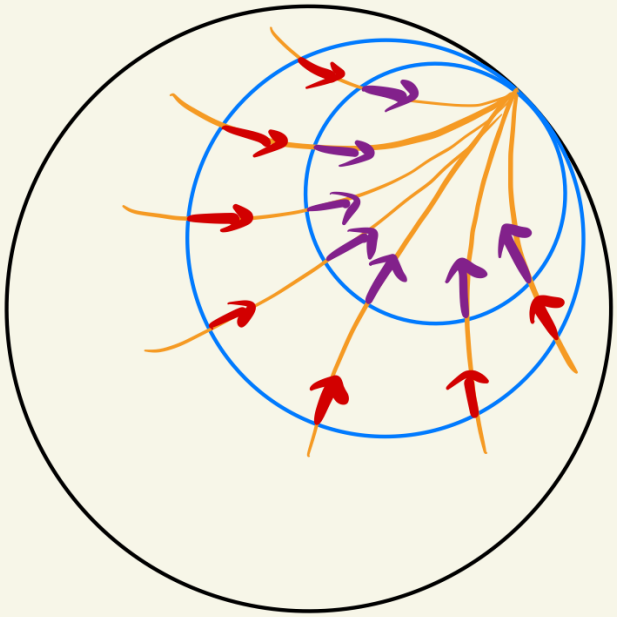
Circle Limit III
M.C. Escher, 1959

Connections to:

Geometric Group Theory

Number Theory

Postcard 2: Geodesic and Horocycle Flows

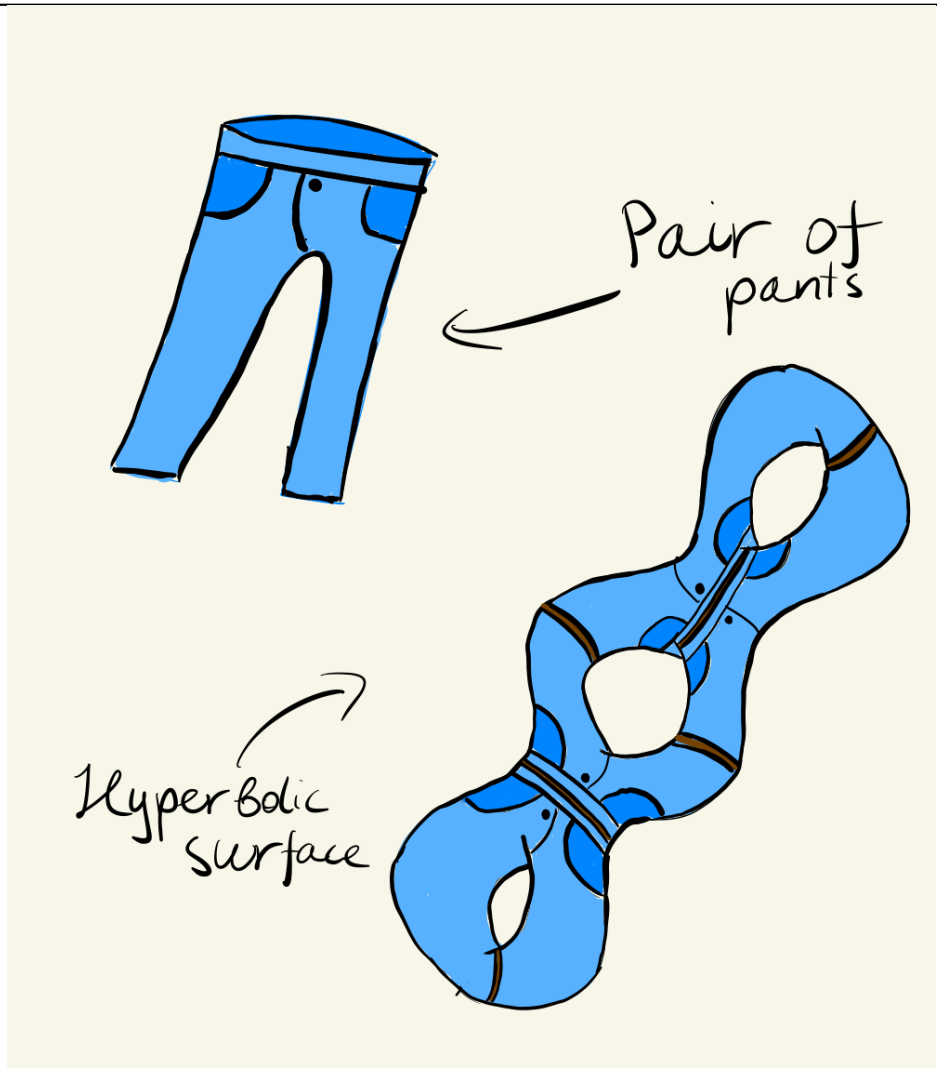


Connections to:

Dynamical Systems

Number Theory

Postcard 3: Teichmüller Space



Building a surface out of pants

Connections to:

- Geometric Group Theory
- Dynamical Systems
- Algebraic Geometry