

Fuchsian groups

Peter Doyle

Math 102: Topics in Geometry

Dartmouth College

Winter 2013

Time TBA

This course will be a general introduction to Fuchsian groups, with emphasis on spectral geometry and arithmetic groups. The subject of Fuchsian groups lies at the intersection between geometry, topology, algebra, number theory, and analysis, so it should be of interest to a wide range of graduate students, including first-year students. The course should also be accessible to undergraduates who have taken Math 63 and 81 (or in exceptional cases, 63 and 71).

The primary course text will be Svetlana's Katok's book 'Fuchsian groups'. A good part of the course will be devoted to developing the techniques to compute explicit examples, using Mathematica, Sage, and Magma.