1. MAT 558 Topics in Geometry: Teichmüller Theory: Accompanying seminar on hyperbolic manifolds

Thursdays, 9:30 - 11 am, Fine 1001, starting on February 23, 2012 No seminar on March 8, 2012

Please let me (wienhard@math.princeton.edu) know soon, which talk you would like to give.

1.1. (G, X)-manifolds, gluing of hyperbolic polyhedra − 1 talk. References: (G, X)-manifolds, developing maps, completeness: [Ra] 343 - 366, [Th] 109-112, 125 - 127, 139-146, [BeP] 45 - 48.
Gluing of hyperbolic polyhedra: [Ra] 431-443, [Th] 118 - 125, 147 - 152.

1.2. Examples of hyperbolic structures on knot complements − 1 talk.
References: [Ra] 444 - 460, [Th] 39 - 42, 128 - 138, 147.

1.3. Figure eight knot - hyperbolic Dehn surgery - 2 talks. References: [Ra] 475 - 504, [Th1] Chapter 4.

1.4. Extending quasi-isometries to the boundary at infinity − 1 talk. References: [BeP] 83 - 93, for the boundary at infinity see [BeP] 29 - 36.

1.5. Volumes of hyperbolic Polyhedra −1 talk. References: [BeP] 94 - 102, [Ra] 461-474; perhaps also [Ra] 518 - 529.

1.6. Gromov-Norm − 2 talks. References: [BeP] 103 - 120, see also [Ra] 529-55.

1.7. Mostow rigidity and applications - 1 talk. References: [BeP] 121 - 132, see also [Ra] 552 - 570.

1.8. Optional: Other proofs of Mostow's theorem. e.g. Mostow's proof [Mo], see other references in [Sp].

References

[BeP] R. Benedetti, C. Petronio, Lectures on hyperbolic manifolds, Springer 1992.

[Ra] J. Ratcliffe, Foundations of hyperbolic manifolds, Graduate Texts in Mathematics 149, Springer 1994.

[Th] W. Thurston, Three-dimensional geometry and topology, Princeton University Press 1997.

[Th1] W. Thurston, The geometry and topology of Three-Manifolds, http://www.msri.org/publications/books/gt3m/

[Mo] G. D. Mostow, Strong rigidity of locally symmetric spaces, Annals of mathematics studies, 78, Princeton University Press 1973.

[Sp] R. J. Spatzier, Harmonic Analysis in Rigidity Theory , (1993) pp. 153 - 205, appeared in Ergodic Theory and its Connection with Harmonic Analysis, Proceedings of the 1993 Alexandria Conference, Karl. E. Petersen, Ibrahim A. Salama, eds. Cambridge University Press 1995.