

AB Geometrie und Topologie

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(Algebraic) Topology I

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preliminary version, as of August 5, 2025

The two main topics of the course will be:

- fundamental group and covering spaces
- singular homology

The course will be continued in the summer term where the main topics will be singular homology and cohomology with coefficients along with the necessary results from homological algebra.

For students of mathematics/physics, third year or later (bachelor, master, TMP).

Prerequisites: basic courses in calculus (=Analysis) and linear algebra, basic knowledge of general topology (alias point set topology).

References:

A. Hatcher, *Algebraic topology*, Cambridge University Press, 2002

W.S. Massey, *Algebraic topology: An introduction*, GTM 56, Springer, 1967