

Algebraic topology B (Topologia algebrica B)

Teachers: Mario Salvetti and Lorenzo Venturello

2023/2024 – 2° semester

Introduction

Broadly speaking the goal of algebraic topology is to apply algebraic techniques to study topological spaces and associated invariants. This course focuses on combinatorial aspects of the subject, which emerge for instance when we model topological spaces with finite objects such as cell complexes, simplicial complexes or posets, or when we study the topology of spaces arising from discrete data. We will present several results and techniques used in this setting.

Content

Topics covered in this course will include the following:

- Hyperplane arrangements: intersection poset, regions count, Zaslavsky's Theorem.

Depending on time constraints and audience we will treat some of the following topics:

- CW and simplicial complexes;
- Poset topology and shellability;
- Discrete Morse theory.

Practical information

The course duration is 42 hours, and it will take place in the second semester. There will be an oral examination, possibly including a short seminar.

Prerequisites

Basic notions of algebraic topology. Having attended the course “Elementi di topologia algebrica” is recommended but not mandatory.

For more information on the course please contact us via e-mail:
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