Homework 07
Mayer–Vietoris Sequence

Algebraic Topology - Winter 2021

Due: **March 25, 2021, 11:59 pm**

Using the Mayer–Vietoris sequence compute the singular homology with integer coefficients of the following spaces:

1. SX where X is a *path-connected* topological space,
2. $S^1 \vee S^1$,
3. $S^1 \times S^1$,
4. $\mathbb{RP}^2$.

You cannot assume that H_1 is the abelianization of π_1. You instead need to compute it explicitly using the long exact sequence.

LaTeXing long-exact sequences can get very tedious and time-consuming. Feel free to submit handwritten solutions for this homework.

Suggested exercises for practice from Hatcher

Pg. 157 28, 29, 30, 31, 32, 35