

# ADAMS SPECTRAL SEQUENCE-II

XINGZHI HUANG

## 1. REVIEW

We first review some basic preliminaries on the lecture of Adams spectral sequence-I.

### 1.1. Spectrum.

**Definition 1.1.** We can define a **spectrum**  $E$  as the following two equivalent ways:

- A sequence of pointed spaces  $\{E_n\}_{n \in \mathbb{Z}}$  together with morphisms  $\sigma_n : \Sigma E_n \rightarrow E_{n+1}$ .
- A sequence of pointed spaces  $\{E_n\}_{n \in \mathbb{Z}}$  together with isomorphisms  $\tilde{\sigma}_n : E_n \xrightarrow{\sim} \Omega E_{n+1}$ .

**Theorem 1.2** (Brown Representability Theorem). *For any reduced*

### 1.2. Eilenberg-MacLane Spectrum.

### 1.3. Cohomology Operations and Stable Cohomology Operations.

## 2. HOPF ALGEBRA

## 3. STEENROD ALGEBRA

## 4. E-ADAMS SPECTRAL SEQUENCE

### 4.1. Classic Adams Spectral Sequence.

## REFERENCES