Roughly BMS2 Ch. 11, but in greater generality

1. The cyclotomic bases

Remark 1.1 THH (A/S) = A & A

cyclotomic

Frobenius

Remark 1.2 (p-typical cyclotomic structure)

X & So a p-typical Cyc Str on X

Remark 1.2 (p-typical cyclotomic structure)

X & Sp a p-typical Cyc Str on X

1) a T-action on X X & Sp

2) T ~ T/cp - equivariant p: X ~ X tcp

Remark 1.3 CAlg (CycSpp) & Cyc (CAlg)p

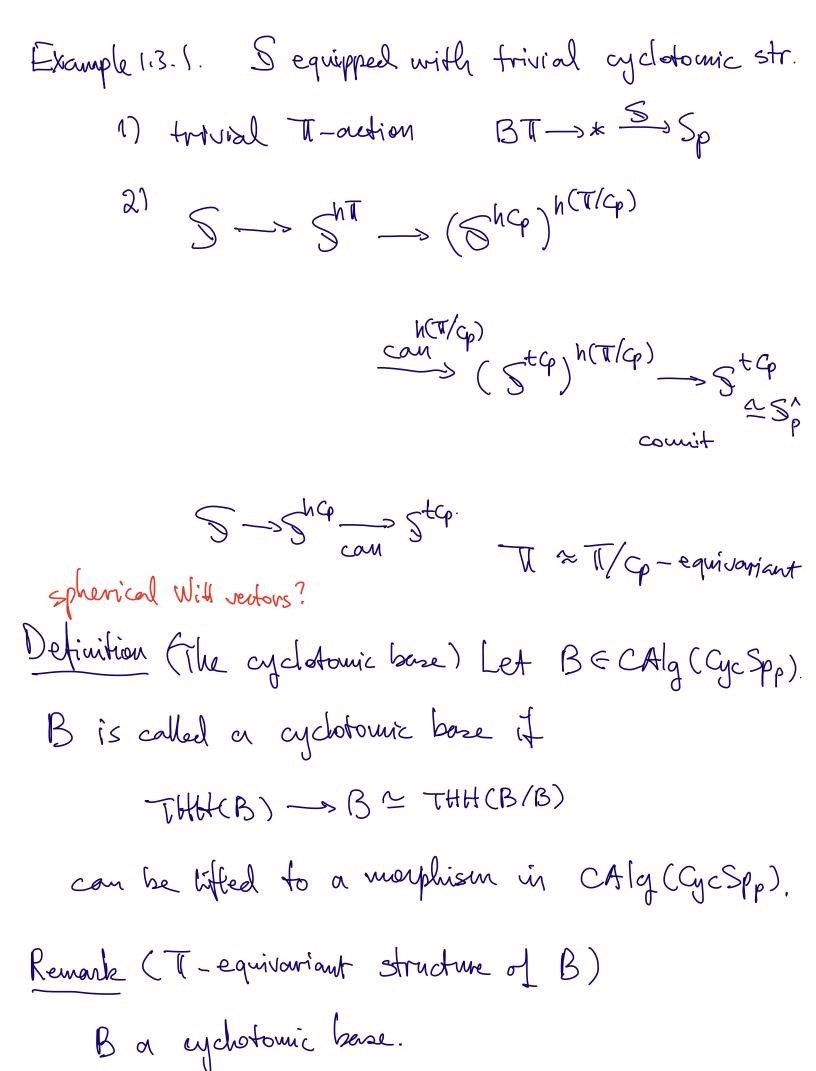
Ew-cyclotomic ring

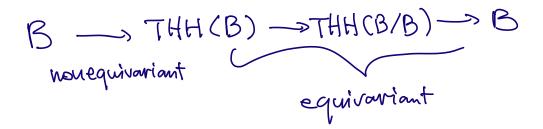
cyclotomic Ew-ring

CAlg (CycSpp) Songet

CAlg (CycSpp) CAlg

preserves (small) colimits Symmetric monoridal





the Travion on B is trivial.

Remark (The Cyc Frob on B) Let B be a cyclotomic base.

The cyclotomic Frob of B is the Tate valued

Frob of B

Example Consider
$$S[z] = \Sigma_{+}^{\infty} N$$

$$\pi_{*}(S[z]) = (\pi_{*}S)[z].$$

S[2] is a cyclotomic base day o with trivial T-antion

Frohenius $S[7] \rightarrow (S[7]^{Cp} = (S[7])^{p}$ $Z \mapsto Z^{p}$ $M \longrightarrow (N^{\times p})^{hCp}$

2. The Tate valued Frobenius and the Segal conjecture $S^{tQ} \simeq S_p^{r}$

Remark (Taste diagonal) There is a natural transformation of fundom Sp -> Sp

 $\Delta p: idsp \rightarrow Tp$ $\times 1 \rightarrow (\chi \otimes Cp) + Cp$

uniquely determined by S -> 3hGp can StGp

Remark A -> A/p

$$\chi \mapsto \chi^{\prime}$$

A > A & Cp . A

replaced by A & Cp Cp Norm

THH. A/CA/AJ.

A&A
A&A

Remark (Segal conjecture) The composition

5 -> Ship and 5tg

exhibits step as sp

Remain of 7th = Fp[0,0-1], [0]=2

In contrast

T* FP

= (11*KU) (x)/507(x)

$$\pi_* K U^{tcp} = (\pi_* K U) \otimes \mathbb{Q}_p(\S_p)$$

$$\Gamma_p J \otimes \mathbb{Q}_p (\S_p)$$
on top

Tate construction machinometric blue shift

on top cyc hom

Remark $X \in Sp$ bounded below $\Delta p : X \longrightarrow (X \otimes Cp)^{+Cp}$ exhibits $(X \otimes Cp)^{+Cp}$ as Xp Ded (Tate valued Freds) A Exo-ring. $Q_p: A \xrightarrow{\Delta p} (A \otimes Cp)^{+Cp} \xrightarrow{m} A^{+Cp}$

Remark 1) KU -> KU[/p] -> KUp[/p]

pth stable

Adams operation

agrees with KU 4p (KUta) hFx ~ KUp [1/p]

a).
$$\mathsf{F}_p \to (\mathsf{F}_p)^\mathsf{h} \mathsf{F}_p^\mathsf{x}$$
 $p=2$. Steenrod square $p = 2$. Steenrod power

NS Example

Det (S-1Exx-rings) An itx-ring A is called a S-Exx-ring if the following conditions are satisfied

- 1) A is p-complete and connective
- 2) A > A^{hCp} cans A^{tCp} is an equivalence

 (Segal conj Ap = A)
- 3). A & R is discrete