Meeting w/ Dominic 2/22 $p=3$

Thursday, February 22, 2018 1:18 PM

$$H_*(S/p \wedge THH(H\pi_* BP\langle 2\rangle)) \Rightarrow H_*(S/p \wedge THH(BP\langle 2\rangle))$$

$$\cong E(\tau_0) \otimes \underbrace{H_* THH(H\pi_* BP\langle 2\rangle)}_{\text{Bökstedt SS}} \qquad \cong E(\tau_0) \otimes H_* BP\langle 2\rangle \otimes E(\lambda_1, \lambda_2, \lambda_3) \otimes P(\mu_3)$$

$$HH_*(H_* H\pi_* BP\langle 2\rangle) \Rightarrow H_* THH(H\pi_* BP\langle 2\rangle)$$

$$H_* H\pi_* BP\langle 2\rangle \cong A/\!/E(0)_* \otimes P_{\mathbb{F}_p}(v_1, v_2)$$

$$H\pi_* BP\langle 2\rangle = H\mathbb{Z}_{(p)}[v_1, v_2] \qquad H\mathbb{Z}_{(p)} \to H\mathbb{Z}_{(p)}[v_1, v_2]$$

$$A/\!/E(0)_* \otimes E(\sigma\xi_1, \sigma\xi_2, \dots) \otimes P(v_1, v_2)$$
$$\otimes \underline{\Gamma(\sigma\tau_1, \sigma\tau_2}, \dots) \otimes E(\sigma v_1, \sigma v_2)$$

$$E_\infty = A/\!/E(0)_* \otimes E(\sigma\xi_1) \otimes P_p(\sigma\bar{\tau}_1, \sigma\bar{\tau}_2, \dots)$$
$$\otimes P(v_1, v_2) \otimes E(\sigma v_1, \sigma v_2)$$

$$H_* THH(H\pi_* BP\langle 2\rangle) \cong \boxed{A/\!/E(0)}_* \otimes \boxed{E(\lambda_1) \otimes P(\mu_1) \otimes P(v_1, v_2) \otimes E(\sigma v_1, \sigma v_2)}$$

comod prim ??

may filt v_1 1

may filt v_2 $p+1$

$d_1(\tau_1) = v_1$

$d_{p+1}(\tau_2) = v_2$

$\mu_1^p = \mu_2$, $\mu_1^{p-1}\sigma v_1 = \lambda_2$

$d_1(\mu_1) = \sigma v_1$

$d_{p+1}(\mu_1^p) = \sigma v_2$

$\mu_1^{p^2} = \mu_3$

$\mu_1^{p^2-p}\sigma v_2 = \lambda_3$

$$E_{p+2} \cong E_\infty \cong H_* THH(BP\langle 2\rangle)$$

$$I_0 \leftarrow I_1 \leftarrow I_2 \leftarrow \dots$$

$$\begin{array}{ccccccc}
I_0 & \Leftarrow & I_0^{\wedge 2} & \Leftarrow & I_0^{\wedge 3} & \Leftarrow & \dots \\
\uparrow & & \uparrow & & \uparrow & & \\
I_1 & \Leftarrow & I_1 \wedge I_0 + I_0 \wedge I_1 & \Leftarrow & \dots & & \\
\uparrow & & \uparrow & & & & \\
I_2 & \Leftarrow & \dots & & & &
\end{array}$$

may filt

v_1, σv_1, τ_1

$2p-2$ $2p-1$

Top

$BP\langle 2\rangle$

$\uparrow$

$BP\langle 2\rangle^{\geq 2p-2}$

$\uparrow$

$BP\langle 2\rangle^{\geq 4p-4}$

$\uparrow$

$$\pi_*(S/p \wedge THH(H\pi_* BP\langle 2\rangle)) \Rightarrow \pi_*(S/p \wedge THH(BP\langle 2\rangle))$$

as comod primitives

$$H_*(S/p \wedge THH(H\pi_* BP\langle 2\rangle)) \Rightarrow H_*(S/p \wedge THH(BP\langle 2\rangle))$$

$$H\mathbb{Z}_{(p)} \to H\pi_* BP\langle 2\rangle$$

$$\begin{array}{ccc}
H\mathbb{Z}_{(p)} & \to & THH(H\mathbb{Z}_{(p)}) \\
\downarrow & & \downarrow \\
H\pi_* BP\langle 2\rangle & \to & THH(H\pi_* BP\langle 2\rangle)
\end{array}$$

$$E(\lambda_1) \otimes P(\mu_1)$$
$$\otimes P(v_1, v_2) \otimes E(\sigma v_1, \sigma v_2) = S_{p*} THH(BP\langle 2\rangle)$$

$d_1(\mu_1) = \sigma v_1$ μ_1^{p}, $\sigma v_1 \mu_1^{p-1} = \lambda_2$

$d_{p+1}(\mu_1^p) = \sigma v_2$ $\mu_1^{p^2} = \mu_2$ $\mu_1^{p^2-p}\sigma v_2 = \lambda_3$

$$E^{TM}_{p+2} \cong THH_*(BP\langle 2\rangle; H\mathbb{F}_p)[v_1, v_2]$$

$$\Downarrow$$

$$THH_*(BP\langle 2\rangle, BP\langle 2\rangle/p)$$

$$THH_*(BP\langle 2\rangle; H\mathbb{F}_p)[v_1, v_2]$$

$$THH_*(BP\langle 2\rangle; k(2))[v_1] \qquad THH_*(BP\langle 2\rangle; k(1))[v_2]$$

BSS BSS

$$THH_*(BP\langle 2\rangle, BP\langle 2\rangle/p)$$

$$F \to BP\langle 2\rangle$$
$$\downarrow$$
$$k(1)$$

$A \to B \to C$ is a cofiber seq in R-mod

$$THH(R; A) \to THH(R; B) \to THH(R; B)$$

$\mathbb{Z}_{(p)}[v_1]$

$$THH_*(H\pi_* BP\langle 2\rangle; H\pi_* BP\langle 1\rangle)$$

$$\Downarrow$$