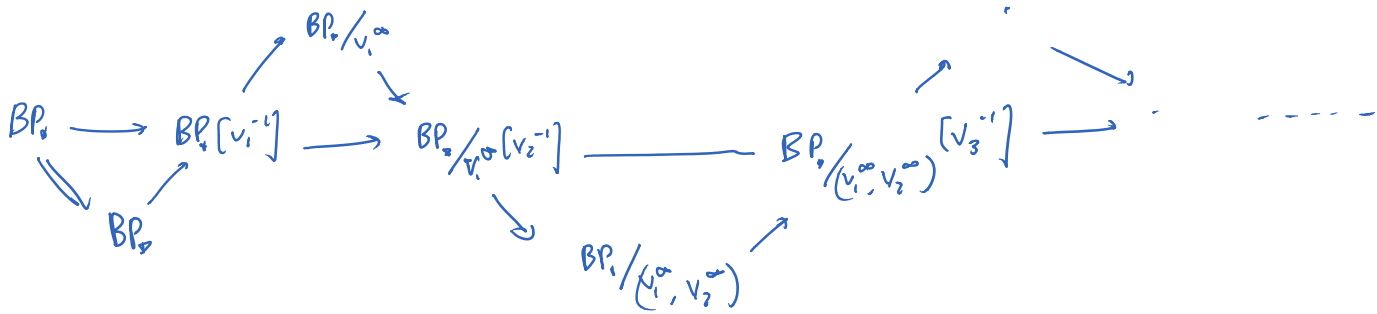


$$\text{Ext}_{BP_*BP}^{s,t}(M) := \text{Ext}_{BP_*BP}^{s,t}(BP_*M)$$



get Chromatic SS

$$E_1^{s,t,n} = \text{Ext}_{BP_*BP}^{s,t} \left(BP_* / (p, v_1^\infty, \dots, v_{n-1}^\infty) [v_n^{-1}] \right) \Rightarrow \text{Ext}_{BP_*BP}^{s+t,n,t} (BP_*)$$

BP_* is a comodule via η_R :

$$\begin{array}{ccc} BP_* & \xrightarrow{\eta} & BP_*BP \otimes_{BP_*} BP_* \\ \eta_R \downarrow & & \parallel \\ & & BP_*BP \end{array}$$

$$\eta_R(v_i) = v_i \quad \text{mod} \quad (p, v_1, \dots, v_{i-1})$$

\Rightarrow Prop ("Alg periodicity thm")

Suppose $I = (p^c, v_1^e, \dots, v_{n-1}^c)$ is an invariant ideal
 (i.e. BP_*/I is a BP_*BP comodule)

Then $\exists i_n \gg 0$ s.t.

$$\cdot v_n^{i_n} : BP_* / I \longrightarrow BP_* / I \quad \text{is a map of comodules}$$

(and consequently $BP_* / (I, v_n^{i_n})$ is a BP-BP-comodule)

Cor: $BP_* / (p, v_1, \dots, v_{n-1})$, $BP_* / (p, v_1, \dots, v_{n-1}, v_n^{-1})$ are BP-BP-comodules

Computations:

$$(1) \quad \text{Ext}_{BP, BP}^{i, t} (BP_Q) \simeq \begin{cases} \mathbb{Q}, & s=t=0 \\ 0, & \text{o/w.} \end{cases}$$

$$(2) \quad \begin{array}{ccc} \text{Ext}_{BP, BP}^0 (BP/p^n) & \longleftarrow & \mathbb{Z}/p^k \left\{ \frac{v_1^{sp^{k-1}}}{p^k} \right\} \\ \Downarrow & & \Downarrow \\ \text{Ext}_{BP, BP}^0 (BP) & \longleftarrow & \mathbb{Z}/p^k \left\{ \frac{v_1^{sp^k}}{p^k} \right\} \end{array}$$

$$\begin{array}{c} v_1^{sp^k} / p^k \\ \Downarrow \\ \mathbb{Z}/p^k \end{array}$$