(1) $E_n \circlearrowleft H$ $\quad\quad$ H = finite $\subset S_n$

want E^{hH} homotopy fixed points spectrum

Hayes

for that need strict action on E.

Don't get that by H but $\mathcal{H} \xrightarrow{\simeq} H$

$\mathcal{H}$ homotopy discrete, $\pi_0 \mathcal{H} = H$.

This does the job:

rather than talking about derived functors,

say $\mathcal{M}_S$ is tensored & cotensored over

topological spaces; that means

$\mathrm{hom}(X, E) = $ spectrum

top space $\quad\quad$ E_∞-ring

functorial in X & E, so if we have

(E^X) $\quad$ action of H on X, then we have

action of H on whole thing

Now $X = EH$ $\quad\quad$ ~~$EH \to E_n$~~

$\mathrm{Map}(EH, E_n) \circlearrowleft H$

fixed pt set of that set is by defn

the htpy fixed pt set of $E_n \circlearrowleft H$

(3) at $p=2$: subgp H of #48 of extended
stabilizer gp

Haynes

(— ———— fixes ground field)

def over $\mathbb{F}_2$, looks at autom. over $\overline{\mathbb{F}_2}$

stabilizes over $\mathbb{F}_4$ (don't get additional autons beyond $\mathbb{F}_4$)

$Gal(\mathbb{F}_4/\mathbb{F}_2)$ acts on S_2

now take semidirect product.

Think of cat of f gps

allow ring homomorphisms into picture

$$R \xrightarrow{f} S \quad \text{morph}$$

$$f_* G \xrightarrow{\cong} H$$

composition ... stack of fgps

Now given fgp $/\mathbb{F}_q$, the fact that it is def over $\mathbb{F}_2$ says that from Gal we get a morphism of f gps add this in.

④ At $p=2$ End-ring of that f gp has another name, it is the ordinary quaternions $\mathbb{F}_2$

maximal dim subgp containing $\mathbb{Z}_2 \times \mathbb{Z}_2$

<u>Claim:</u> Can pick out the binary tetrahedral gp as subgp of that that is gp of # 24

uniquely up to conjugacy

Q_8 : $\pm i \pm j \pm 1$

want to find ext by a $\sqrt[3]{1}$,

to do so, add in $\dfrac{1-i-j-k}{2}$

maximal order in $\mathbb{Q}_2$ slightly larger than $\hat{\mathbb{Z}}_2$

$L_{K(2)}\,tmf = EO_2$ → Silverman

Serre Tate thm

$L_{K(2)} = \lim p^n, v_1^n$

unique supersingular ell. curve $/\overline{\mathbb{F}}_2$

Haynes

A_∞ - spectra used to be category

H - M : topological category

all relevant computations are done already

A_∞ - action ⇝ strict action

Kan - extension

π_0 : $\mathrm{Aut}(E) \xrightarrow{\simeq} \pi_0(\mathrm{Aut}(E))$

pointwise ⇒ can replace E by smthg $\simeq E$ on which $\pi_0\mathrm{Aut}(E)$ does act

- Haynes notes for rel Frob. ≅

Quillen s.s.

once you know E_*E is étale over E_*, everything o.k.

étale is comm alg

to get back to ass. alg

Haynes

homotopy fixed point spectral sequence

$EO_* X$

$EO_* EO$

Goerss Mahowald Rez:

same as ANSS for $EO \wedge X$

htpy of

$HU \wedge X \rightsquigarrow \cancel{EO \wedge} X$