Groal: Compute T* (MU).

Recull that MU is complex oriented, so there is a universal map 9:2 -> T* MU.

WTS: 9 is an isomorphism.

Method: i) Compute H, (MU) 1) Compute H* (MU)

2) L -> 11 * (MU) -> H* (MU) Today rationl early 3) Now To (MU) is fig abelian group. It will suffice to see L -> Tr(uu) is a an iso after p-adic completion of all primes (Adams Spectral Semence.)

Precollections From Tommy pt. II Let Ebe a complex oriented Spectrum.

· MULI) is the desuspension of the Thom Space for the toutological burdle L-> 4 PD, but this is homotopy earithen to $E^{-1}4P^{-1}$

Thom iso:

E* (MUCI) = E*-1 (CPO)

"=" t. ELLT] = ELLT]
3 E (CPa)

Homology of Mu: Prelude

There is a non-degenerate princing in AHSS $H^*(xp^n, E_*) \Rightarrow E^*(xp^n)$ H+ C+PM & E+) => Ex (+P") =) Ex (4Pa) is a fee Ex -mobbe on po, pi,... Low to 1,t, t2, ---(Since Rage 2 collapses w/ zero differentials) Thom - Isomorphism implies noe goverly: E* (MUCn)) = Squn(E, MUCI)) Ex (Me) = colin Ex MU(n) = colin (Existi(EX) > Extiti (Xiti))

(Map (Ho colin MU(n), E) = Holin Mep (MU(n), E)

+ Milnor exact securence

More on E*(MU)

what is

Ex (MUCH) > Ex (MUCHH)?

MULUS=MULOS / MLD CSMULIS MULUS >MULUTIS

for n=0: Mu(o) → Mu(i) induas
our choice of bo.

In general Xbo

Sym! Ex {bo,...,}

2/

Ex (mucn+1)

Lurie Prop 4.7 (or BU computation) => $E_{x}\left(\mathcal{M}\mathcal{U}\right)=E_{x}\left[\beta_{1}\beta_{2},...\right]$

Recollections From Elijah 1:

H* MU = Z[B1,] this

Recall that over R $g(x) = x + b_1 x^2 + b_2 x^3 + \cdots$ $g(g^{-1}(x) + g^{-1}(y)) \text{ is a } FGAL$ over $Z \subset b_1, b_2, \cdots J$

El Churckeristic ment p:L → Z T bis. -- J

Es a rectional isomorphism

(Lorie Lecture 2: Prop #10)

How To Conclude

We have $L \xrightarrow{\gamma} \pi_* \mu \mu \xrightarrow{H} \# \mu \mu = \pi(\beta_1,...)$ corresponds to a FGL. If that law is $g(g^{-1}(x)+g^{-1}(y))$ with $g(x) = x + \beta_1 x^2 + \beta_2 x^3 + ...$

> Hort is a rational isomorphism.

For your now is to identify the FGIL determined by Horp.

FGLS ON ExMU

Let E be any complex oriented colomology.

MUNE hers 600 complex orientions.

ONE from MU 5 and DE from E. &

TOMUNE) = EXMU = TO ELD,....]

Le: PE, YMU E MUNE (CPO)

> (Tr E) [B1, ---][[PE]] = (MUNE)*(CP°)

= Tr & CB1, ---,][[Thu]].

Sor a, ETA E []

(Lurie 7.4) ai = Bi , Ymu = PE + b, 9E+ --

Recall: Complex Orientalion > FGIL

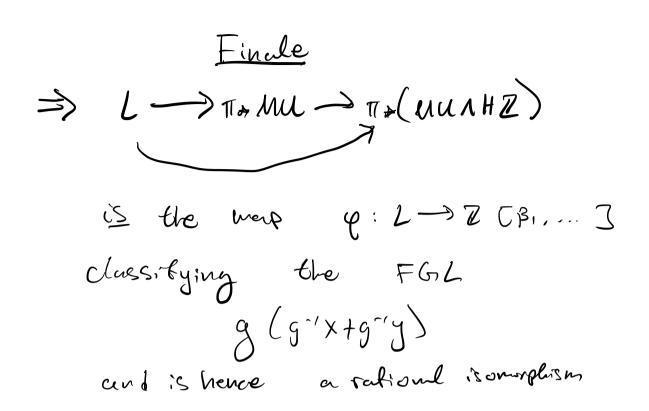
$$\Pi_{1,1}\Pi_{2}: 4P^{\infty} \times 4P^{\infty} \longrightarrow 4P^{\infty},$$

$$\mathbf{m}: \mathbb{C}P^{\infty} \times \mathbb{C}P^{\infty} \longrightarrow 4P^{\infty} \left(\text{classify } \delta_{1} \otimes \beta \right)$$

Substituting
$$P_{Mu} = \underset{i \ge 1}{\mathcal{E}} P_i \gamma_E^{it}$$

$$= g (\gamma_E),$$

$$f_{Mu}(x,y) = g \circ f_E(g^{-1}x,g^{-1}y)$$



Addendum (Just in Case):

Hurewicz map:

L > 11* (MUNHZ)

corresponds to FGL from Mu, fine

L > Tr (\$ NHZ) > Tr (MUNHZ)

\$\frac{1}{5} \tau Z