3 April 2025 (Lurie & construction of Livin-Tate spection goal construction of labor - Take Spectro - yestizang Cubic Take Commel groups we spectral deformation theory, compute him of homotopy ops. \$ 7 The Goess- Hop Eas- Mille theorem Thun (Goess - Hopkins - Miller) & - pefet field have p > 0

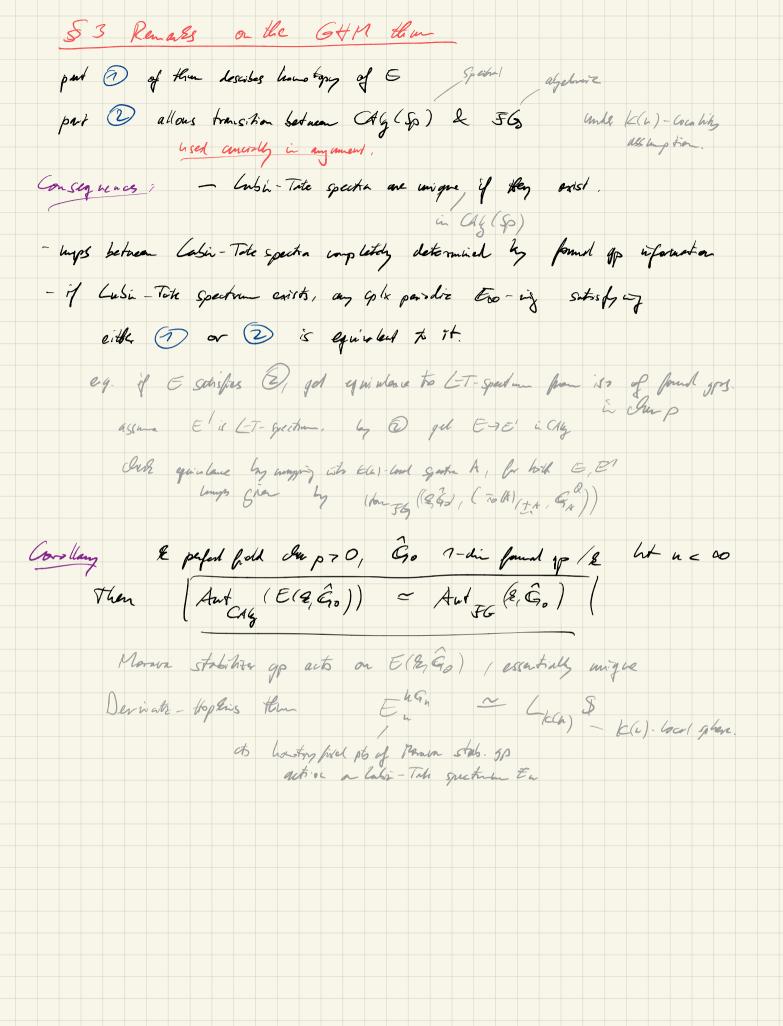
Then storm EC-2

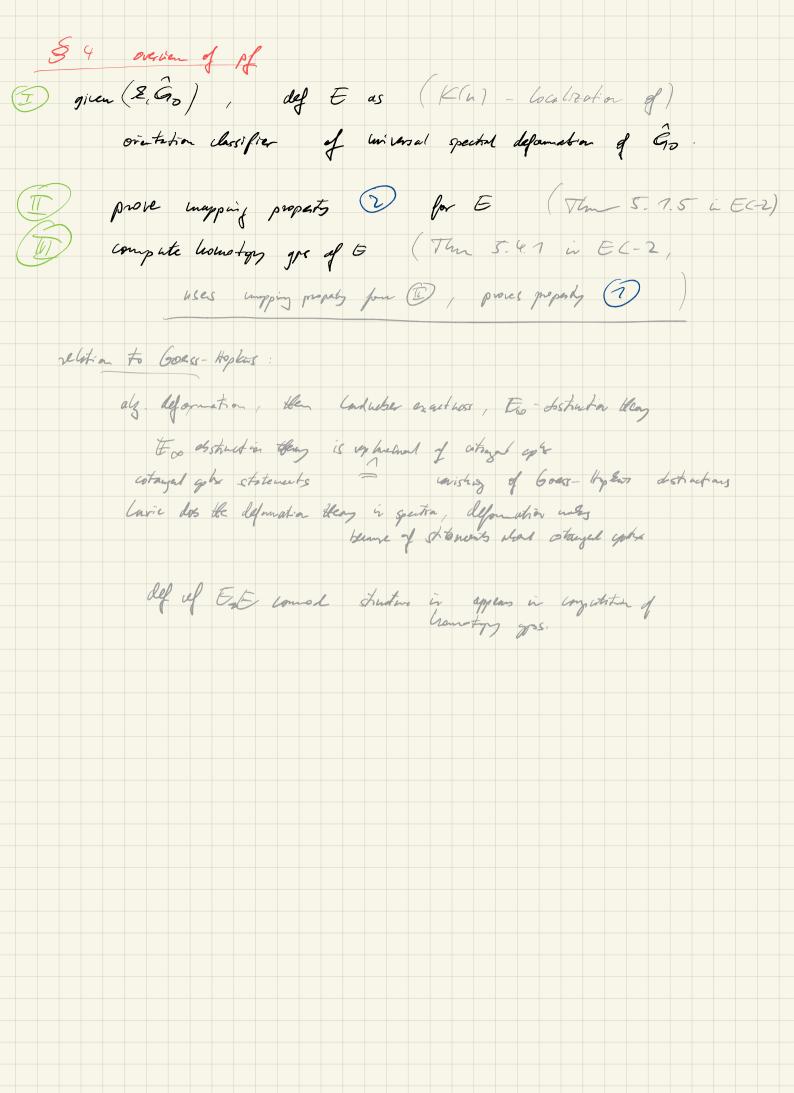
Then there exists

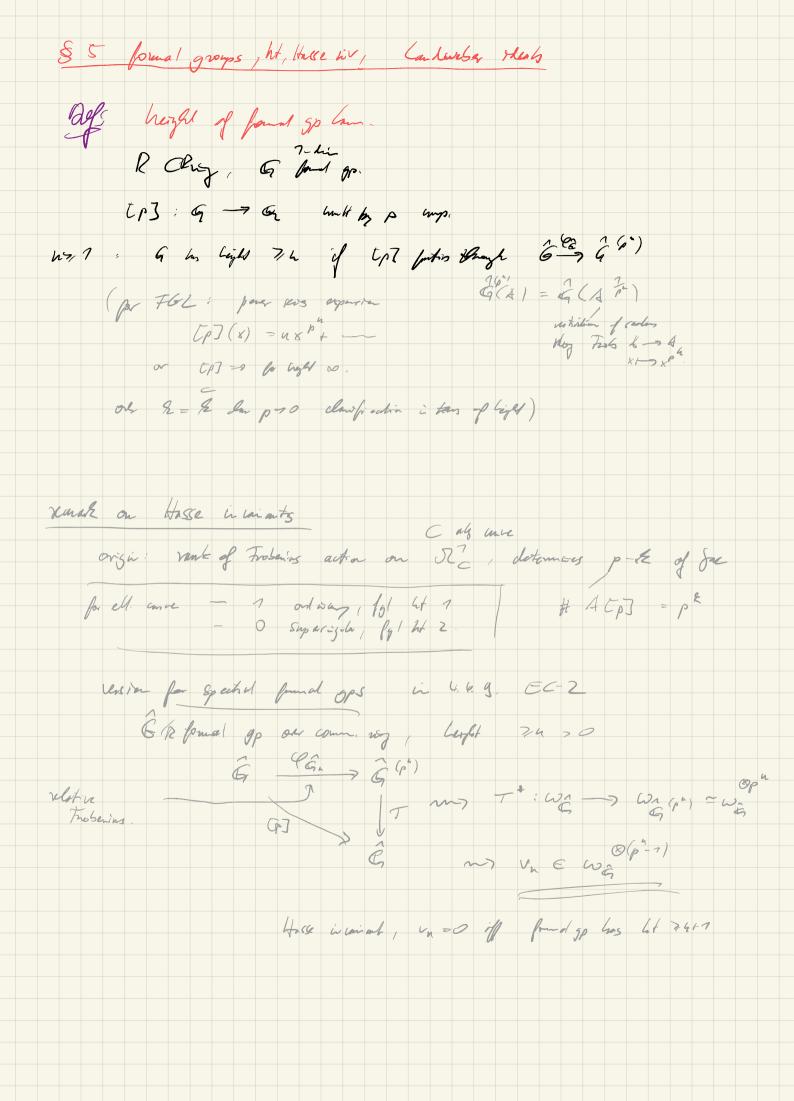
Then there exists - a complex periodiz E_{∞} mig $E \in Ctg(S_p)$ & - an CO \times ! $(2, \hat{G}_0) \simeq (T_0(E)/T_n^E, G_E)$ of found g_S (1) E is ever periode & $\left(\pi_{o}(E), \hat{G}_{E}^{Q}\right) \rightarrow \left(\pi_{o}(E)/T_{o}^{E}, \hat{G}_{E}^{Q}\right) \rightarrow \left(\mathcal{Z}, \hat{G}_{o}\right)$ 13 the universe deformation of Go In particular To (E) = RLT = W(8| Tun un T Cusi - Take mg (3) E is K(u) -local & for every K(L)-load Enry A, a wholes an equir My CAY (E, A) ~ Hom ((2, Go), (TO(A)/IA, GA)) dissute set of morphisms in cotes on

& Z. Recap / notation Defs - spectrum A w/ cmp es - A complex orientable if e faitois as $S = Z^{\infty-2} \subset \mathbb{P}^7 \longrightarrow Z^{\infty-2} \subset \mathbb{P}^\infty \longrightarrow A$ defines on & interes Thom so for yok to. Evening & walky 2-paids if ZA R1 proj. A-mod. op/x periode := op/x overtible + coerly 2 periodiz. even periodiz if To (A) = To (A) [T+1] Br T = T-2 (A) (=> cplx periods, by computation of A 2(cpr)) Ku, To (Ku) ~ Z Tut 3 Expl: Pfile To (PMU) ~ L Tuto]

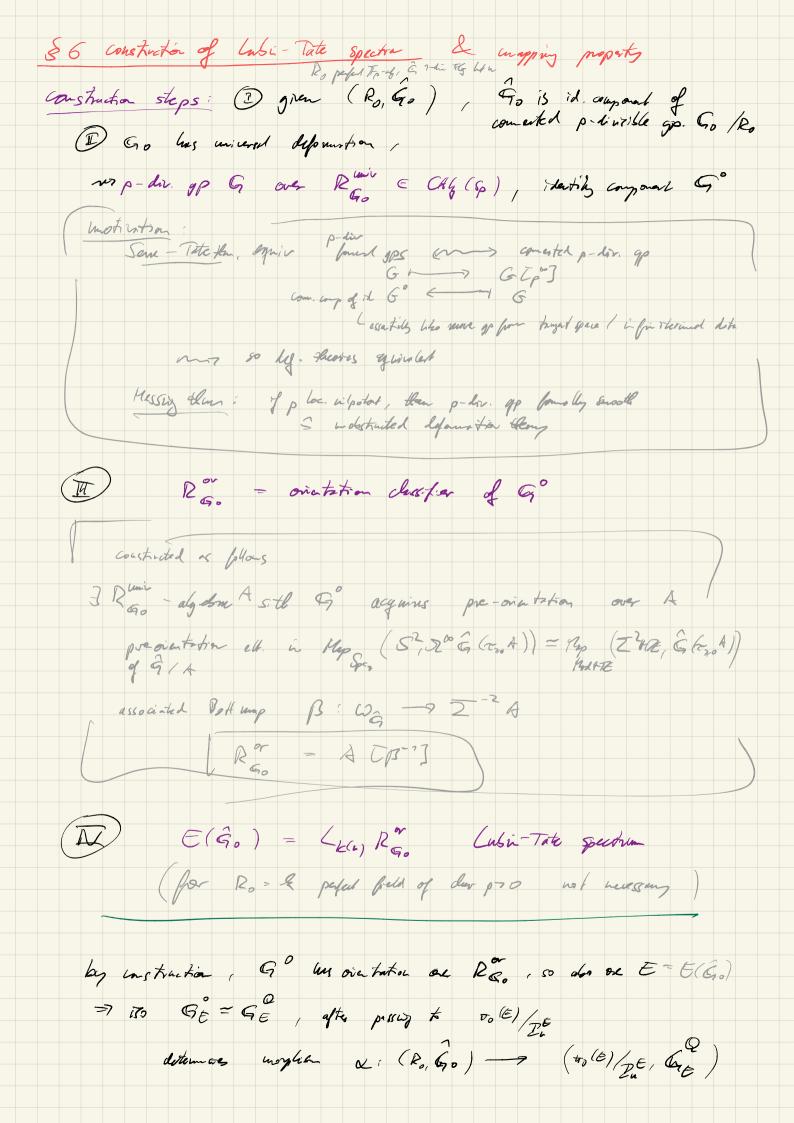
(perodic cples bookson, Larent my see leter)







Def / Can livele ded Prop R (Ring , G fond yp 1/2, There will that $I_{\eta}^{G} \subseteq R$ s. $I_{\eta}^{G} \subseteq R_{\eta}(R - \eta R')$ (Via Van as R-and how Wig - R, wige for Mal I hachie constructe starting of IL = (0) of G hos ht a in and con IN. In = (py, 7 your)) The is alled with Carlete Hear for topings , work in To 04 G/R ht (n In = 10/R) arter fant gp. The A (p) lovel you partir too my, h > 1 A K(a)- Gold iff @ complete with In & NO(A) D I'm - 0,41



Thin (mapping property for E = E(Eso)) Thin 5.7.5 EC-2 For any k(n)-boat Essing A, composition u/ & induce an equiv $\left(\begin{array}{c} \mathcal{H}_{ap} \left(\mathcal{E}_{\mathcal{A}} \right) \simeq \mathcal{H}_{ap} \left(\left(\mathcal{E}_{o}, \widehat{\mathcal{E}}_{o} \right), \left(\mathcal{H}_{o} \left(\mathcal{A} \right) \right) \right) \\ \mathcal{F}_{a} \end{array} \right)$ A (a) Gal =7A p-w/potat portered in red of I and A advir Exoning, To (A) has I'm - which type. - 5 & Owler p. dor. gp. (com. cays of the soliter found 50) - hosphan of two-rigs E -> 4 mys It to Int Remir -> E -> A morphin of alux too- 75 Map (Rain 1) = Def (A) = colina BTP(A) x Hom (20, to (1)/2)

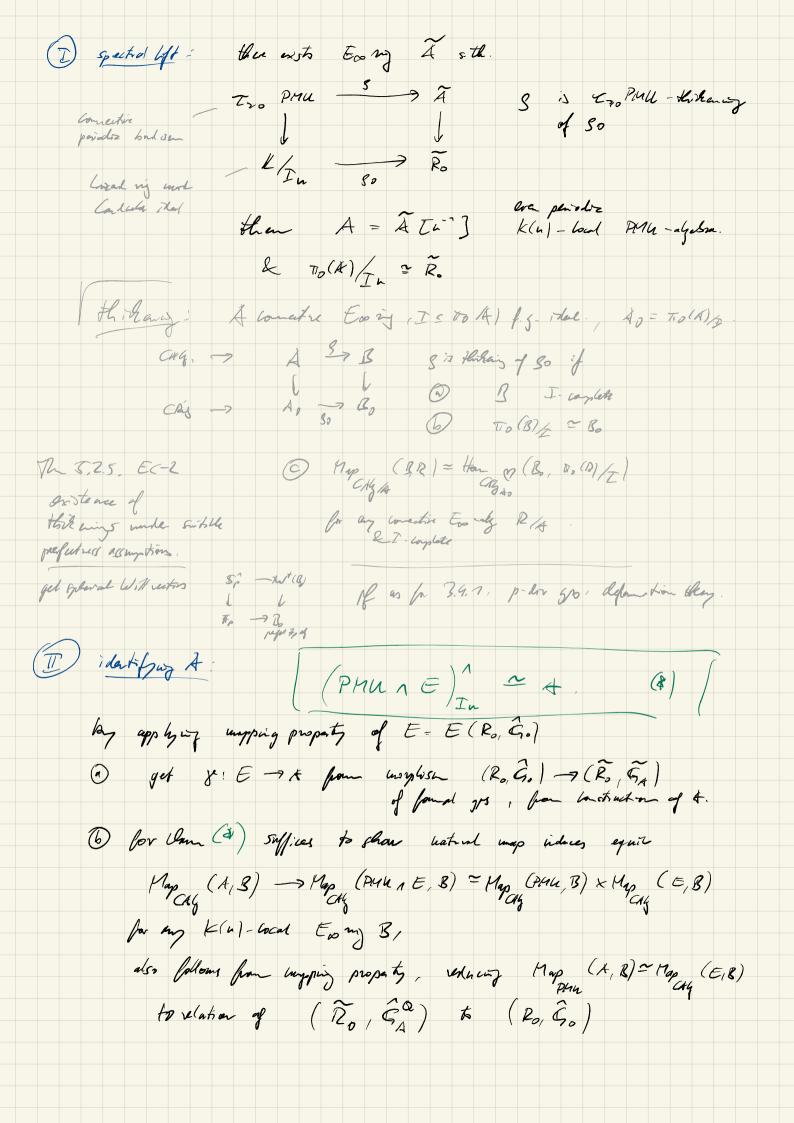
L snot

Prot BTP(TOM)(1)

(by lef of Rain

A 41 (1) lude to the fata, $Map (E,X) = Colin BTor(A) \times (form (Po, vo(X)/_{E})$ $I = BTor(vo(A)/_{E})$ Go Comely cometel, so all left & appeing Lee foully con what _____ 12 Go type p-low gp /4 Cdin { Ga } × hon (Ro, Vo (A)) Comby con or sted p-low gp /s Form (To 4/E) low ly comested police for formed gps (2.3.?) dog som constact for with Cambracke Hand fig that of ly contains In >> Mapag (E18) = Hon- FG ((Ro, Go), (00(A)/In, GA)) Ø





(II) Koszul go & long utation of lower tops of E. want to show (p, in Tunn) ugular seq. in Tale) Koszul gobr R com. of (sn. - Sa) say of ett. $K_{\mathbf{z}} = \bigotimes \left[\mathcal{R} \xrightarrow{S_1} \mathcal{R} \right]$ If $S_{n-1}S_n$ my $S_{\mathbf{y}}$, $|H'(K_*)| = \begin{cases} R/(s_n - s_k) & i > 0 \\ 0 & \text{otherwise} \end{cases}$ Sportal analysis: E as above, Im: 224m-7) = 7 E $|E(m) = \bigotimes cofb(\overline{c}_i)| \sim cofbson$ (this happens in coast of E-mod.) sin : larly for A as above : A(un) = E(m) & A by construction the A(un) = To (A) / Im (v v; for yellow say in A) & $\pi_* A(n) \cong \widetilde{\mathcal{R}}_{\sigma} T^{\sigma}$ (88) PMh n E(u) already In-complete, Vi and wilpotently & PAU 1 E 164 -> lonotopy of E(a) concentred in are dy desca dig induction: for all 0 < m < n cof's seq. [24m-1] E(m) = E(m) = E(m+1) split in the band seq => To(E(m)) in ever dez & Vin ivj on To E(m). De chart after falls flet box chang to Po & Ro Tuta] = v. (Agu nE(h)) (RN)