PLAN (1) (onominon of $(\omega, \Theta) \mapsto R_{\omega}^{\Theta}$ (2) Show that if $\omega \rightarrow \omega'$ $\Theta=1$ then $R_{\omega}^{T}=R_{\omega}^{T}$

3) Give alternate consmission of Ro = ROTCB

6/Fq connected reductive group TCBCG F-stable torus and Borel.

 $W = \frac{N_G(T)}{T}$ weyl group than an action of F)

X = F/B XxX = L O(w) C Garbars

(hB,9B) & O(w) => h-19 & BwB

Fact: (f w= w, wz l(w)= l(w,)+liwz)

and B, B" Borels with Rel 1B, B")= W

Then 2! B' oir. Red 18, B') = w, Rel (B', B")=~2

(B,B") Constant of alg. var (B,B',B")

where B=T.U is the Levi decomposition

observamons: GF () Y(w), X(w)

and YIW) -> XIW) is equivalet.

Claim: the map $\gamma(\omega) \longrightarrow \chi(\omega)$ is a falow cover

win covering grown Two = } teT/t=wf(t)w-1}

This means O T(w) f acts freely on YIW], mualy on XW)

(2) hibers of $Y(\omega) \rightarrow X(\omega)$ are acted on

simple homemely by Thu) F

3 létale locally moral)
in étale supology locally homes

$$Cor: H_c'(Y(\omega), Q_e) = \bigoplus H_c'(Y(\omega), Q_e)_{\mathcal{O}}$$

$$Oethir$$

Det:
$$\{(\omega, O \in T\widetilde{\omega})^F\}\} \longrightarrow R\widetilde{\omega} = \{(-1)^i H_c^i(Y\omega), Q_e\}_O$$

$$\in K_O \left(\operatorname{Rep}_{Q_e}(G^F)\right)$$

virtual reps." = { integer times combinations of }

Example:
$$W=e$$
, then
$$\chi(w) - G^{F}/g^{F}$$

$$\gamma(w) = G^{f}/U^{F}$$

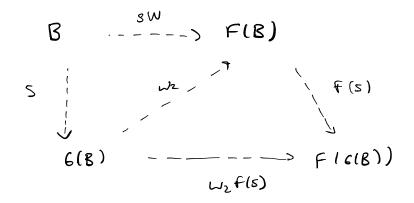
$$T(w)^{F} = T^{F}$$

Ruh: DL induction Recovers parasolic induction
in me degenerate care w=e.

$$R_{\omega}^{i} = R_{\omega}^{i}$$
 $\left[\chi(\omega) \neq \chi(\omega^{i}) \right]$

(ase a)
$$w = S w_2$$
 $w' = w^s f(s)$

given BEX(W)



$$\begin{array}{c|c} X\omega & \xrightarrow{\mathcal{L}} & X(\omega') \\ \downarrow & \downarrow & \downarrow \\ X(Fw) & \xrightarrow{\mathcal{L}} & X(Fw') \end{array}$$

Paut 1s F is a homomorphism, so induces + some olingram charle g_1 vies $E_C(X(\omega)) = E_C(X(\omega))$.

where
$$X_i = (R) + 8B = F(RB)$$

 $X_2 = X(W') \setminus X_i$

$$\chi_i \longrightarrow \chi \omega_i$$
 $\beta \mapsto r(\beta)$

Fact:
$$X_1 \longrightarrow X(W)$$
 is a line bundle so
(hoses are isomorphic h $A' = k$)

Then:
$$H_c^i(X_i) = H_c^{i-2}(X lw)$$
 $H_c^i(A^i, Q_e) = \begin{cases} Q_e & \text{if } i=2 \\ 0 & \text{old} \end{cases}$

Dec(
$$X_1$$
) = Ec($X(\omega)$)

Miritle Ec(X_2) = 0 and Ec($X(\omega)$) = Ec(X_1) +

Ec(X_2)