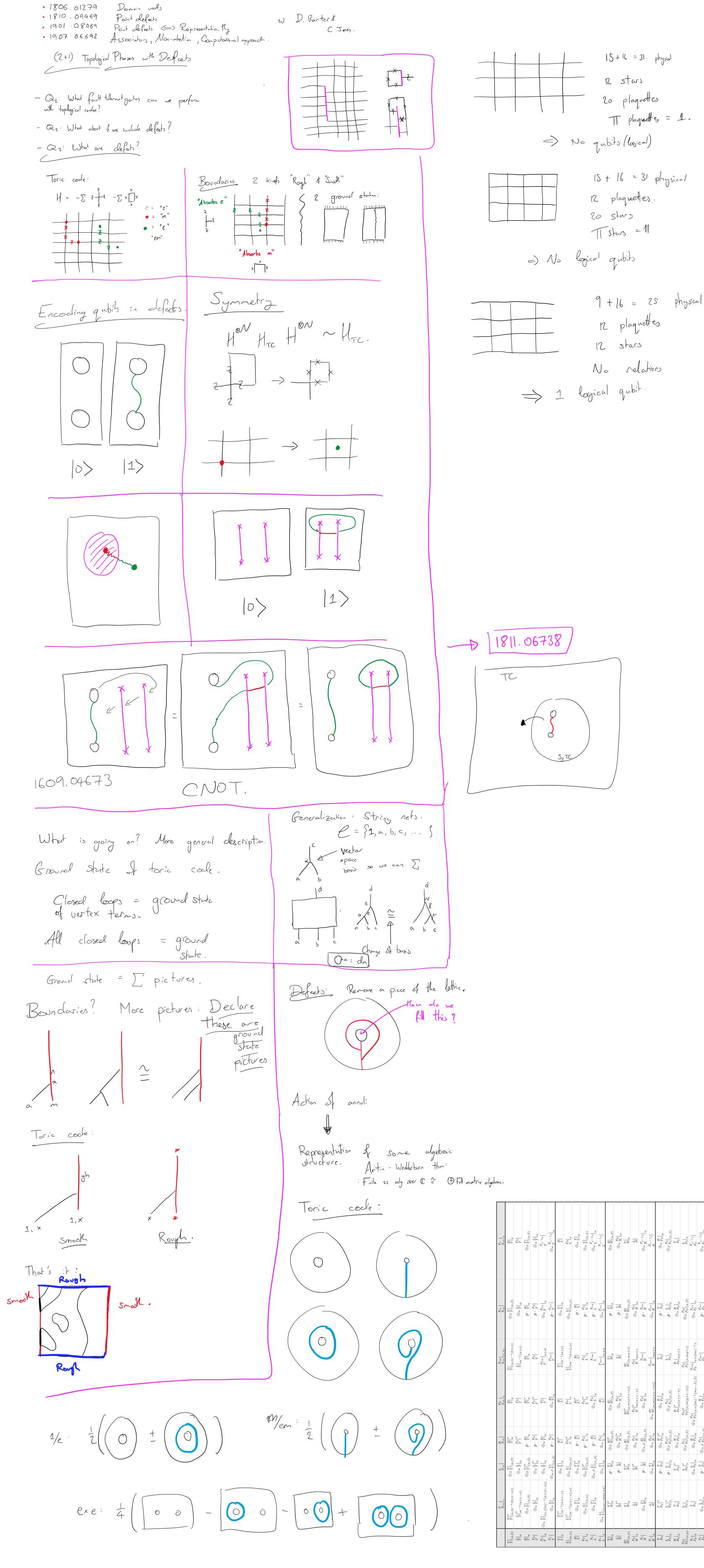
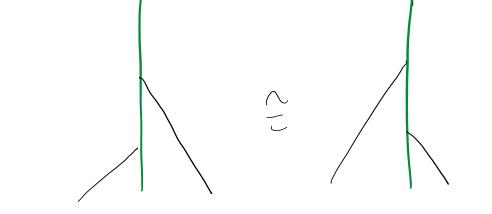
Friday, 18 October 2019 3:36 pm



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| | $\left. \begin{array}{c} T\\ X_{m} \end{array} \right _{c}$ | X_m | $\frac{R}{X_m}$ | $\left. F_{0} \right _{z}$ | $\left. \begin{array}{c} X_m \\ X_m \end{array} \right _{(c,z)}$ | $X_m \mid X_m$ | $\left. F_t \right _z$ |
|--|--|--|--|---|---|--|--|
| $\left. \begin{array}{c} T\\T \end{array} \right _{(a,b)}$ | $_{T}^{T \nu}{}_{(a,m^{-1}(b+c-\nu))}$ | $\oplus_{\beta} \left. T \right _{(a,\beta)}$ | $\frac{R}{T}\Big _{a}^{\nu}$ | $\frac{R}{T} _{a}$ | $\left. T \right _{\left(a,m^{-1}(b+c) ight)}$ | $\oplus_{eta} \left. egin{smallmatrix} T \ (a,eta) \end{matrix} ight.$ | $\frac{R}{T a}$ |
| $\frac{L}{T} _a$ | $\left. {T \over T} \right _{m = 1}^{ u} _{(a+c- u)}$ | $\oplus_{\alpha} \frac{L}{T} \Big _{\alpha}$ | $T_0 ^{\nu}$ | T_0 | $\left. T \right _{m-1(a+c)}$ | $\oplus_{\alpha} \frac{L}{T} _{\alpha}$ | $\left {F_0} \right $ |
| $\frac{R}{T} _a$ | $\oplus_{\beta} T_{T} _{(a,\beta)}$ | $\oplus_{\beta} \frac{T}{T}\Big _{(a,\beta)}^{\nu}$ | $p \cdot \frac{R}{T} _a$ | $\frac{R}{T}\Big _{a}^{\nu}$ | $\left. {{_T^R}} \right _a$ | $p \cdot \frac{R}{T} _a$ | $\oplus_{eta} T _{(a,eta)}$ |
| $ _{T}^{F_{0}} $ | $\oplus_{\alpha} \frac{L}{T} \Big _{\alpha}$ | $\oplus_{\alpha} \frac{L}{T} \Big _{\alpha}^{\nu}$ | $p \cdot rac{F_0}{T} $ | $F_0 ^{ u}$ | $ _{T}^{F_0} $ | $p \cdot rac{F_0}{T} $ | $\oplus_{\alpha} \frac{L}{T} _{\alpha}$ |
| $\left. \begin{array}{c} X_{l} \\ T \end{array} \right _{a}$ | $\oplus_{\alpha} \left. T \right _{(\alpha,(lm)^{-1}(a+cl-\alpha))}$ | $\oplus_{\alpha} \frac{L}{T} \Big _{\alpha}$ | $\oplus_{\alpha} \frac{R}{T} _{\alpha}$ | $\left {{F_0} \atop T} \right $ | $\left. {T}^{Xlm} \right _{a+cl}$ | $\oplus_{\alpha} \frac{X_{ln}}{T} \Big _{\alpha}$ | $\left {F_{i}^{l} - 1\epsilon} ight $ |
| $\left {{F_r} \over T} \right $ | $\oplus_{\alpha} \frac{L}{T} _{\alpha}$ | $\oplus_{\alpha,\beta} \left. \begin{smallmatrix} T \\ T \end{smallmatrix} \right _{(\alpha,\beta)}$ | $p \cdot \frac{F_0}{T}$ | $\oplus_{\alpha} \frac{R}{T} _{\alpha}$ | $\frac{F_{mr}}{T}$ | $p \cdot \frac{F_{nr}}{T}$ | $\oplus_{lpha} rac{X_{r-1t}}{T} \Big _{lpha}$ |
| $\frac{T}{L} _{a}$ | $\frac{T}{L}\Big _{m=1}^{\nu}(a+c- u)$ | $\oplus_{\alpha} \frac{T}{L} _{\alpha}$ | $\frac{R}{L} ^{\nu}$ | $\frac{R}{L}$ | $\left. \begin{array}{c} T\\ L \end{array} \right _{m-1(a+c)}$ | $\oplus_{\alpha} \frac{T}{L} _{\alpha}$ | |
| $\left. \begin{array}{c} L \\ L \\ L \end{array} \right _{(\alpha - \pi)}$ | $\frac{L}{L}\Big _{(m-1(\alpha+c-n)=n)}^{\nu}\Big $ | $\oplus_{\alpha} \frac{L}{L}\Big _{(\alpha,\pi)}$ | $\frac{F_0}{L}\Big _{x}^{\nu}$ | $F_0 _{x}$ | $\left. \frac{L}{L} \right _{(m-1(\alpha\pm c), m)}$ | $\oplus_{\alpha} \begin{bmatrix} L \\ L \end{bmatrix}_{(\alpha, \pi)}$ | $F_0 = \Gamma$ |
| $\frac{R}{L}$ | $\oplus_{\alpha} \frac{(u+c-\nu), x}{L}$ | $\oplus_{\alpha} \frac{T}{L} \Big _{\alpha}^{\nu}$ | $p \cdot \frac{R}{L}$ | R v | $\begin{bmatrix} m \\ L \end{bmatrix}$ | $p \cdot \frac{R}{L}$ | $\oplus_{\alpha} \frac{T}{L}$ |
| $\frac{F_0}{L}$ | $\oplus_{\alpha} \frac{L}{L} _{(\alpha, \pi)}$ | $\oplus_{\alpha} \frac{L}{L} \Big _{(\alpha, r)}^{\nu}$ | $p \cdot \frac{F_0}{L} _x$ | $F_0 \frac{\nu}{r}$ | F_0 | $p \cdot \frac{F_0}{L} _{x}$ | $\oplus \alpha \overset{L}{}_{L} [\alpha , \pi)$ |
| X_l | | $\oplus_{\alpha,\beta} \frac{L}{L} _{(\alpha,\beta)}$ | $p \cdot \frac{R}{L}$ | $\oplus_{\alpha} F_0 _{\alpha}$ | X_{lm} | $p \cdot \frac{X_{ln}}{L}$ | $\oplus_{\alpha} \frac{F_{l-1t}}{r}$ |
| $\frac{F_r}{L}$ | $\alpha r + x)$ | $\oplus_{\alpha} \frac{T}{L} _{\alpha}$ | $\oplus_{\alpha} \frac{F_0}{L} _{\alpha}$ | R | $\frac{F_{mr}}{L}$ | $\oplus_{\alpha} \frac{F_{nr}}{L} _{\alpha}$ | $\left \frac{X_{r-1t}}{L} \right $ |
| $\frac{T}{R} _{a}$ | $\frac{T}{R a}$ | $p \cdot \frac{T}{R} _a$ | $\oplus_{\beta} \frac{R}{R} _{(a,\beta)}^{\nu}$ | $\oplus_{eta} \left. \begin{smallmatrix} R \\ (a,eta) \end{smallmatrix} \right _{(a,eta)}$ | $\frac{T}{R}$ | $p \cdot \frac{T}{R} _a$ | $\oplus_{\beta} \frac{R}{R} _{(a,\beta)}$ |
| $\frac{L}{R}$ | $\frac{L}{R}$ | $p \cdot \frac{L}{R}$ | $\oplus_{\alpha} \frac{F_0}{R} \Big _{\alpha}^{\nu}$ | $\oplus_{\alpha} \frac{F_0}{R} \Big _{\alpha}$ | $\frac{L}{R}$ | $p \cdot \frac{L}{R}$ | $\oplus_{\alpha} \frac{F_0}{R} _{\alpha}$ |
| $\binom{R}{R}_{(a,x)}$ | $\frac{T}{Ra}$ | $\frac{T}{R}\Big _{a}^{\nu}$ | $\oplus_{\beta} \left. \frac{R}{R} \right _{(a,\beta)}$ | $\frac{R}{R} \left[a.m(x+z-\nu) \right]$ | $\left. \begin{array}{c} R \\ R \end{array} \right _{(a.mx+z)}$ | $\oplus_{\mathcal{B}} \frac{R}{R} _{(a,\beta)}$ | $\left \frac{T}{R} \right _{a}$ |
| $\frac{F_0}{R}$ | $ _{R}^{L} $ | $\frac{L}{R} ^{\nu}$ | $\oplus_{\alpha} \frac{F_0}{R} _{\alpha}$ | $F_0 \Big {\scriptstyle V \atop R} {\scriptstyle (m(x+z- u))}$ | ${F_0 \brack R + z}$ | $\oplus_{\alpha} \frac{F_0}{R} _{\alpha}$ | L |
| $ R^{X_l} $ | $\oplus_{\alpha} {}^{T}_{R} _{\alpha}$ | $p \cdot \frac{L}{R}$ | $\oplus_{\alpha,\beta} \left. \begin{smallmatrix} R \\ R \end{smallmatrix} \right _{(\alpha,\beta)}$ | | $\frac{X_{lm}}{R}$ | $p \cdot \frac{X_{ln}}{R}$ | $\oplus_{\alpha} \frac{F_{l}-1}{R}\Big _{lpha}$ |
| $\frac{F_r}{R}$ | L | $\oplus_{\alpha} \frac{T}{R}\Big _{\alpha}$ | $\oplus_{\alpha} \frac{F_0}{R} \Big _{\alpha}$ | $\oplus_{\alpha} {}^R_R$ | $\left. \begin{smallmatrix} F_{mr} \\ R \end{smallmatrix} \right _{mx+z}$ | $\oplus_{\alpha} \frac{F_{nr}}{R}\Big _{\alpha}$ | $\frac{X_{r-1t}}{R}$ |
| $\frac{T}{F_0}$ | $\left. \begin{smallmatrix} T \\ F_0 \end{smallmatrix} \right ^{ u}$ | $p \cdot \frac{T}{F_0}$ | $\oplus_{\alpha} \frac{R}{F_0} \Big _{\alpha}^{\nu}$ | $\oplus_{\alpha} \left. \frac{R}{F_0} \right _{\alpha}$ | $\left {{T} \atop {F_0}} \right $ | $p \cdot rac{T}{F_0}$ | $\oplus_{\alpha} \frac{R}{F_0}\Big _{lpha}$ |
| $\frac{L}{F_0}\Big _x$ | $F_0 \left \frac{ \nu}{x} \right $ | $p \cdot \frac{L}{F_0}\Big _x$ | $\oplus_{\beta} \frac{F_0}{F_0}\Big _{(x,\beta)}^{\nu}$ | $\oplus_{eta} rac{F_0}{F_0} _{(x,eta)}$ | $\frac{L}{F_0}\Big _x$ | $p\cdot \left. \begin{smallmatrix} L\\ F_0 \end{smallmatrix} \right _x$ | $\oplus_{eta} rac{F_0}{F_0} \Big _{(x,eta)}$ |
| $\frac{R}{F_0} _x$ | $\left F_0 \right $ | $\frac{T}{F_0} \Big ^{\nu}$ | $\oplus_{\alpha} \frac{R}{F_0} \Big _{\alpha}$ | $\left. \begin{array}{c} R\\ F_0 \end{array} \right \left \begin{array}{c} u\\ m(x+z- u) \end{array} \right $ | $\left. \begin{smallmatrix} R\\ F_0 \end{smallmatrix} \right _{mx+z}$ | $\oplus_{\alpha} \frac{R}{F_0} \Big _{\alpha}$ | F_0 |
| $\left. F_0 \right _{(x,y)}$ | $\left. rac{L}{F_0} ight _x$ | $\frac{L}{F_0}\Big _x^{\nu}$ | $\oplus_{\beta} \left. \begin{smallmatrix} F_0 \\ F_0 \end{smallmatrix} \right _{(x,\beta)}$ | $F_0 \Big _{V = F_0 \cap (x, m(y+z- u))}$ | $\left. F_0 \right _{F_0} \left _{(x,my+z)} \right $ | $\oplus_{eta} \left. egin{smallmatrix} F_0 \ K_0 \end{bmatrix} (x,eta)$ | $\left. rac{L}{F_0} ight _x$ |
| $\left. \begin{smallmatrix} X_l \\ F_0 \end{smallmatrix} \right _x$ | F_0 | $\oplus_{\alpha} \frac{L}{F_0} \Big _{\alpha}$ | $\oplus_{\alpha} \left. \begin{smallmatrix} R \\ F_0 \end{smallmatrix} \right _{\alpha}$ | $\left. \oplus_{\beta} \left. \begin{smallmatrix} F_0 \\ F_0 \end{smallmatrix} \right _{(x+(lm)^{-1}(mz-\beta),\beta)}$ | | $\oplus_{\alpha} rac{X_{ln}}{F_0}\Big _{lpha}$ | $\left rac{F_{l}}{F_{0}} ight ^{-1t}$ |
| $\left {F_{0} \atop F_{0}} \right $ | $\oplus_{\alpha} \left. \begin{smallmatrix} L \\ F_0 \end{smallmatrix} \right _{lpha}$ | | $\oplus_{\alpha,\beta} \left. \begin{smallmatrix} F_0 \\ F_0 \end{smallmatrix} \right _{(\alpha,\beta)}$ | | | $p \cdot rac{F_{nr}}{F_0} $ | $\oplus_{\alpha} \frac{X_{r-1t}}{F_0} \Big _{lpha}$ |
| $\left. \begin{array}{c} T \\ X_k \end{array} \right _a$ | $ \left. \begin{array}{c} T \\ X_{km} \right _{a+k(c-\nu)}^{\nu} \end{array} \right. $ | ъ | $\frac{R}{X_{km}} ^{\nu}$ | | $\left. \begin{array}{c} T \\ X_{km} \end{array} \right _{a+ck}$ | $\oplus_{\alpha} {}^{T}_{Km} _{\alpha}$ | $\left {{{X_{km}}} \atop X_{km}} \right $ |
| $\left \begin{array}{c} L \\ X_k \end{array} \right $ | $X_{km} ^{ u}$ | $p \cdot \frac{L}{X_{km}}$ | $\oplus_{\alpha} \frac{F_0}{X_{km}} \Big _{\alpha}^{\nu}$ | $\oplus_{\alpha} \frac{F_0}{X_{km}} \Big _{\alpha}$ | X_{km} | $p \cdot \frac{L}{X_{km}}$ | $\oplus_{\alpha} \frac{F_0}{X_{km}} \Big _{\alpha}$ |
| $\frac{R}{X_k}$ | $\oplus_{\alpha} \frac{T}{X_{km}} \Big _{\alpha}$ | $\oplus_{\alpha} {T \atop X_{km}} \Big _{\alpha}^{\nu}$ | $p \cdot \frac{R}{X_{km}}$ | $\frac{R}{X_{km}} ^{ u}$ | $\left X_{km} \right $ | $p \cdot rac{R}{X_{km}}$ | $\oplus_{lpha} rac{T}{X_{km}} \Big _{lpha}$ |
| $\left. \begin{array}{c} F_0 \\ X_k \end{array} \right _x$ | X_{km} | $\sum_{X_{km}} ^{\nu}$ | $\oplus_{\alpha} \frac{F_0}{X_{km}} \Big _{\alpha}$ | $\frac{F_0}{X_{km}}\Big _{k=1}^{\nu}(kx+z-\nu)$ | $\left. \begin{smallmatrix} F_0 \\ X_{km} \end{smallmatrix} \right _{x+(km)^{-1}z}$ | $\oplus_{lpha} rac{F_0}{X_{km}} \Big _{lpha}$ | X_{km}^L |
| $\left. \begin{array}{c} X_k \\ X_k \end{array} \right _{(a,x)}$ | $\left. \begin{array}{c} T \\ X_{km} \end{array} \right _{a+ck}$ | X_{km} | $\left \begin{smallmatrix} R \\ X_{km} \end{smallmatrix} \right $ | $\left. egin{smallmatrix} F_0 \ X_{km} \end{matrix} \right _{k-1(x+z)}$ | $\left. \begin{array}{c} X_{km} \\ X_{km} \\ \left (a + ck, mx + z) \right. \end{array} \right.$ | $\left \begin{array}{c} X_{kn} \\ X_{km} \\ \end{array} \right $ | $\left. rac{F_{k-1t}}{X_{km}} ight _{k-1(at)+mx+z}$ |
| $\left {{_{X_{k}}^{X_{l}}}} \right $ | $\oplus_{\alpha} {T \atop X_{km}} \Big _{\alpha}$ | $p\cdot \frac{L}{X_{km}}\Big $ | $p \cdot \frac{R}{X_{km}}$ | $\oplus_{lpha} rac{F_0}{X_{km}}\Big _{lpha}$ | $X_{lm} X_{km}$ | $\begin{cases} \oplus_{\alpha,\beta} X_{km}^{X_{km}} _{(\alpha,\beta)} & km = ln \\ p \cdot X_{ln}^{X_{ln}} & \text{otherwise} \end{cases}$ | $\oplus_{\alpha} \frac{F_{l-1t}}{X_{km}} \big _{\alpha}$ |
| $\left. \begin{smallmatrix} F_r \\ X_k \end{smallmatrix} \right _x$ | $\left \begin{array}{c} L \\ X_{km} \end{array} \right $ | $\oplus_{\alpha} {T \atop X_{km}} \Big _{\alpha}$ | $\oplus_{\alpha} {F_0 \atop X_{km}} \Big _{\alpha}$ | $\left \begin{array}{c} R \\ X_{km} \end{array} \right $ | $\left. \begin{array}{c} F_{mr} \\ X_{km} \\ ckmr+mx+z \end{array} \right.$ | $\oplus \alpha F_{nr} _{\alpha}$ | $\begin{cases} \oplus_{X_{xm}}^{X_{km}} _{(\alpha,mx+z-mr\alpha)} & km = r^{-1}t \\ X_{r^{-1}t} & \text{otherwise} \end{cases}$ |
| T_{F} | $T_{F_{-}} ^{\nu}$ | $p \cdot \frac{T}{F}$ | $\oplus_{\alpha} \stackrel{R}{_{F}}$ | $\oplus_{\alpha} {}_{F}^{R}$ | T | $p \cdot \frac{T}{F}$ | $\oplus \alpha \stackrel{R}{F}$ |
| $\frac{L}{F_a}$ | $\frac{L}{F_{ma}} \frac{\nu}{c_{\alpha-\nu\alpha+v}}$ | $\oplus_{\alpha} \frac{L}{F_{ma}} \Big _{\alpha}$ | $F_0 F_{m,a} \nu$ | F_0 | $F_{ma} \Big _{ca+m}$ | $\oplus \alpha F_{ma}$ | F_{ma} |
| $F_q _x$ | F_{mq} | $\frac{T}{F_{mq}} ^{\nu}$ | $\oplus_{\alpha} \frac{R}{F_{mq}} \Big _{\alpha}$ | $\frac{R}{F_{mq}}\Big _{m(x+z- u)}^{ u}$ | $\frac{R}{F_{mq}}\Big _{mx+z}$ | $\oplus_{\alpha} \frac{R}{F_{mq}} _{\alpha}$ | F_{mq} |
| $F_0 $ | $\oplus_{\alpha} \frac{L}{F_{mq}} \Big _{\alpha}$ | $\oplus_{\alpha} \frac{L}{F_{mq}} \Big _{\alpha}^{\nu}$ | $p \cdot rac{F_0}{F_{mq}}$ | F_{mq} | F_{mq} | $p \cdot rac{F_0}{F_{mq}} $ | |
| $\left. \begin{smallmatrix} X_l \\ F_q \end{smallmatrix} \right _x$ | F_{mq} | $\oplus_{\alpha} {L \atop F_{mq}} \Big _{\alpha}$ | $\oplus_{\alpha} \left. \begin{smallmatrix} R \\ F_{mq} \end{smallmatrix} \right _{\alpha}$ | F_{m_q} | $\left. \begin{smallmatrix} X_{lm} \\ F_{mq} \end{smallmatrix} \right _{clmq+mx+z}$ | $\oplus_{\alpha} \left. \begin{smallmatrix} X_{ln} \\ F_{mq} \end{smallmatrix} \right _{\alpha}$ | $\begin{cases} \bigoplus_{r} \alpha_{F_{mq}}^{F_{mq}} _{(\alpha,mx+z-lm\alpha)} & qm = l^{-1}t \\ f_{l}^{-1}t & \text{otherwise} \end{cases}$ |
| $\left. \begin{smallmatrix} F_q \\ F_q \end{smallmatrix} \right _{(x,y)}$ | $F_{mq} \left _{cq+x}\right $ | F_{mq} | F_{mq} | $\left. F_{mq} \right _{m(y+z)}$ | $\left. \begin{matrix} F_{mq} \\ F_{mq} \end{matrix} \right _{(cq+x,my+z)}$ | $\frac{F_{nq}}{F_{mq}}$ | $\left. \frac{X_{q-1t}}{F_{mq}} \right _{q^{-1}(tx)+my+z}$ |
| $\left. \begin{smallmatrix} F_{T} \\ F_{q} \end{smallmatrix} \right $ | $\oplus_{\alpha} \frac{L}{F_{mq}}\Big _{\alpha}$ | $p \cdot \frac{T}{F_{mq}}$ | $p \cdot rac{F_0}{F_{mq}}$ | $\oplus_{lpha} \left. \begin{smallmatrix} R & \\ R & m_q \end{smallmatrix} \right _{lpha}$ | $\frac{F_{mr}}{F_{mq}}$ | $\begin{cases} \oplus_{\alpha,\beta} F_{mq}^{F_{mq}} _{(\alpha,\beta)} & qm = rn \\ p \cdot F_{rr}^{F_{rr}} & \text{otherwise} \end{cases}$ | $\oplus_{\alpha} \frac{X_{r-1t}}{F_{mq}} \big _{\alpha}$ |
| | | | | | | 1 hui | |



More groval computations

•
$$\phi : A \xrightarrow{ss alg aver C} End(A)$$

• $\phi : A \xrightarrow{b} End(A)$
 $\alpha \mapsto \phi_{\alpha}$
 $\varphi_{\alpha}(b) = \alpha b - b \alpha$
Kernel of $\phi = Z(A)$

Find central idempotents:

1) Pick ale Z(A) randonly

Eigenvectors e: Sf La

a eiej = 1; eiej = 2; eiej

$$e_{i}e_{j} = 0 \quad unless \quad \lambda_{i} = \lambda_{j}$$

$$(ranchom ly undersen)$$

$$uon f have this$$

$$e_{i}^{2} = \mu_{j}e_{i} \quad \longrightarrow \quad \overline{e_{i}} = \frac{1}{\mu_{i}}e_{i}$$

Now we know that

B:= Aei is full matrix algebra. $D_{cc} \circ p_{ose} \qquad \mathcal{B}_{i} \rightarrow \mathcal{M}_{N_{c} \times N_{c}^{i}}(\ell)$