$$\underset{\omega}{\mathsf{C}}|\hbar = \left\{ \hbar \xrightarrow[\text{bihol}]{\wr} \hbar \right\} \xleftarrow{\exp} \underset{\omega}{\mathsf{G}}|\hbar$$

$$\text{CUT} \;\; \wr \in \underset{\omega}{\mathsf{C}}|\hbar \subset \hbar \times \mathsf{C}|\mathsf{L} = \hbar \times {}_n\mathbb{C}^n_{\mathsf{C}} \ni {}^o\wr : {}^o\underline{\wr}$$

$$\Longrightarrow \dim \underset{\omega}{\mathsf{C}}|\hbar \leqslant 2n + 2\,n^2 = 2n\,(n+1)$$

$$\text{sogar} \;\; \dim \underset{\omega}{\mathsf{C}}|\hbar \leqslant n\,(n+2)$$

$$\hbar_0 : \hbar_1 \Subset \hbar \Longrightarrow \bigwedge_{\varepsilon > 0} \bigvee_{\delta > 0} \bigwedge_{\wr \cdot}^{\underset{\omega}{\mathsf{C}}|\hbar} \overline{\wr - \acute{\wr}} \underset{\hbar_0}{\leqslant} \delta \Longrightarrow \overline{\wr - \acute{\wr}} \underset{\hbar_1}{\leqslant} \varepsilon$$

$$\hbar_0 \Subset \hbar_1 \Subset \hbar$$

$$0 < \alpha < 1 < \beta \Longrightarrow \bigvee_{\varrho > 0} \bigwedge_{\gamma}^{\mathfrak{G}_\omega|\hbar} \bigwedge_{p < q} \left\| \gamma^p - \imath \right\| \underset{\hbar_1}{\leqslant} \varrho \Longrightarrow \alpha \left\| \gamma - \imath \right\| \underset{\hbar_0}{\leqslant} \frac{\left\| \gamma^q - \imath \right\|}{q} \underset{\hbar_0}{\leqslant} \beta \left\| \gamma - \imath \right\|$$

OE $\hbar_0$ rund

$$\hbar_0 \Subset \underset{\text{rund}}{C} \Subset \hbar_1 \Longrightarrow \bigvee_{M > 0} \bigwedge_{z:w \in C} \bigwedge \gamma \in {}^{\hbar_1}\underset{\omega}{\triangle} \mathrm{I} \left\| {}^{z}\gamma - {}^{w}\gamma \right\| \underset{\text{MWS}}{\leqslant} \left\| z - w \right\|^{z|w} \left\| \underset{-}{\overset{\bullet}{\gamma}}{}^{\hbar} \right\| \underset{\text{CUG}}{\leqslant} M \left\| z - w \right\| {}^{\hbar_1}\left\| \overset{\bullet}{\gamma} \right\|$$

$$\varrho > 0 + \sqsubset \leqslant 1 - \varrho M < 1 + \varrho M \leqslant \beta$$

$$\boldsymbol{\gamma} \in {}^{\hbar_1}\underset{\omega}{\triangle} \mathrm{I} \left\| \boldsymbol{\gamma} - \imath \right\| \underset{\hbar_1}{\leqslant} \varrho$$

$$\underbrace{1 - \varrho M} \left\| z - w \right\| \leqslant \left\| {}^{z}\boldsymbol{\gamma} - {}^{w}\boldsymbol{\gamma} \right\| \leqslant 2C \underbrace{1 + \varrho M} \left\| z - w \right\| (*) \Longleftarrow \boldsymbol{\gamma} - \imath \in {}^{\hbar_1}\underset{\omega}{\triangle} \mathrm{I}$$

$$\left\| z - w \right\| - \left\| \underbrace{{}^{z}\boldsymbol{\gamma} - z} - \underbrace{{}^{w}\boldsymbol{\gamma} - w} \right\| \leqslant \left\| {}^{z}\boldsymbol{\gamma} - {}^{w}\boldsymbol{\gamma} \right\| \leqslant 2C \left\| z - w \right\| + \left\| \underbrace{{}^{z}\boldsymbol{\gamma} - z} - \underbrace{{}^{w}\boldsymbol{\gamma} - w} \right\|$$

$$\wedge \left\| \underbrace{{}^{z}\boldsymbol{\gamma} - z} - \underbrace{{}^{w}\boldsymbol{\gamma} - w} \right\| \leqslant 2C \varrho M \left\| z - w \right\|$$

$$\bigwedge_{p < q} \left\| \gamma^p - \imath \right\| \underset{\hbar_1}{\leqslant} \varrho$$

$$\boldsymbol{\gamma} = \frac{\imath + \gamma + \gamma^2 + \cdots + \gamma^{q-1}}{q} = \frac{1}{q} \sum_{i}^{q} \gamma^i \Longrightarrow \left\| \boldsymbol{\gamma} - \imath \right\| \underset{\hbar_1}{\leqslant} \frac{1}{q} \sum_{i}^{q} \left\| \gamma^i - \imath \right\| \underset{\hbar_1}{\leqslant} \varrho$$

$$\gamma \left(\hbar_0 \right) \subset C$$

$$z \in \hbar_0 \Longrightarrow w = {}^{z}\gamma \in C$$

$$\underset{*}{\Longrightarrow} \alpha \left\| z - {}^{z}\gamma \right\| \leqslant \underbrace{1 - \varrho M} \left\| z - {}^{z}\gamma \right\| \leqslant \frac{1}{q} \left\| \underbrace{z + {}^{z}\gamma + \cdots + {}^{z}\gamma^{q-1}} - \underbrace{{}^{z}\gamma + \cdots + {}^{z}\gamma^{q}} \right\|$$

$$= \frac{\left\| z - {}^{z}\gamma^q \right\|}{q} \leqslant \underbrace{1 + \varrho M} \left\| z - {}^{z}\gamma \right\| \leqslant \beta \left\| z - {}^{z}\gamma \right\|$$

COR $\mathfrak{G}_\omega|\hbar$ no small subgroups $\bigvee_{\mathfrak{G}_\omega|\hbar \supset U \ni \imath} U \supset K_0 \sqsubset \mathfrak{G}_\omega|\hbar \Longrightarrow K_0 = \imath$

$$\underset{\omega}{\subsetneq}|\hbar\llcorner\imath \ni \upsilon_j \rightsquigarrow \imath \Rightarrow \begin{cases} \bigvee m_j \rightsquigarrow +\infty \\ m_j\left(\upsilon_j-\imath\right) \underset{\hbar}{\overset{\text{cpt}}{\leadsto}} \flat \neq 0 \end{cases}$$

$$\text{fest } \hbar_1 \Subset \hbar$$

$$\bigwedge \hbar_0 \Subset \hbar \bigvee_{\max\ \varrho_0} \overset{\hbar_1}{\curlyvee} \bigwedge_{p<q} \overline{\upsilon^p-\imath} \leqslant \varrho_0 \Rightarrow \alpha\overline{\upsilon-\imath} \underset{\hbar_0}{\leqslant} \frac{\overline{\upsilon^q-\imath}}{q} \underset{\hbar_0}{\leqslant} \beta\overline{\upsilon-\imath}$$

$$\bigwedge_{\underset{\omega}{\subsetneq}|\hbar\llcorner\upsilon\neq\imath} \bigvee_{\min\ q_{0\,\upsilon}\in\mathbb{N}} {}^{\hbar_1}\overline{\upsilon^{q_{0\,\upsilon}}-\imath}^{\bullet} > \varrho_0$$

$$\lightning \bigwedge_{\mathbb{N}\ni q} {}^{\hbar_1}\overline{\upsilon^q-\imath}^{\bullet} \leqslant \varrho_0 \Rightarrow \alpha\, {}^{\hbar_0}\overline{\upsilon-\imath}^{\bullet} \leqslant \frac{{}^{\hbar}\overline{\upsilon^q-\imath}^{\bullet}}{i} \text{ vb } 0 \Leftarrow q \rightsquigarrow +\infty \Rightarrow \upsilon = \imath \lightning$$

$$q_j = q_{\hbar_0:\upsilon_j} \Rightarrow \bigwedge_{\acute{\hbar}_0} \bigvee_{c>0} \frac{q_j}{c} \leqslant \acute{q}_j \leqslant c\, q_j$$

$$\text{OE } \acute{\hbar}_0 \subset \hbar_0 \Rightarrow \varrho_{\acute{\hbar}_0} \leqslant \varrho_{\hbar_0}$$

$$\acute{q}_j \leqslant q_j$$

$$\lightning \frac{q_j}{\acute{q}_j} \rightsquigarrow +\infty \Rightarrow \overline{\upsilon^{\acute{q}_j}-\imath} \underset{\hbar_0}{\leqslant} \acute{q}_j\beta\overline{\upsilon_j-\imath} \underset{\hbar_0}{=} \bigvee i_j \frac{\beta}{\alpha}\frac{\acute{q}_j}{q_j}\overline{\upsilon_j-\imath} \underset{\hbar_0}{\leqslant} \frac{\beta}{\alpha}\frac{\acute{q}_j}{q_j}\overline{\upsilon_j^{q_j}-\imath} \rightsquigarrow 0 \text{ but } \overset{\hbar_1}{\curlyvee} \overline{\upsilon_j^{\acute{q}_j}-\imath} > \varrho_{\acute{\hbar}_0} \lightning$$

$${}^{\hbar_1}\overline{\upsilon_j-\imath}^{\bullet} \rightsquigarrow 0 \Rightarrow q_j \rightsquigarrow +\infty \wedge q_j\overline{\upsilon_j-\imath} \underset{\hbar_0}{\leqslant} \frac{1}{\alpha}\overline{\upsilon_j^{q_j}-\imath}$$

$$q_j * \acute{q}_j \text{ for } \acute{\hbar}_0 \Rightarrow q_j\overline{\upsilon_j-\imath} \underset{\acute{\hbar}_0}{\leqslant} \text{cst } \overline{\upsilon_j^{q_j}-\imath}$$

$$\Rightarrow \text{ bes } q_j\underbrace{\upsilon_j-\imath} \in {}^{\hbar}\underset{\omega}{\triangle}\mathbb{C} \underset{\text{MON}}{\Rightarrow} q_j\underbrace{\upsilon_j-\imath} \leadsto \flat \in {}^{\hbar}\underset{\omega}{\triangle}\mathbb{C}\llcorner\upsilon\rightsquigarrow\upsilon_j^{q_j}$$

$${}^{\hbar_1}\overline{\upsilon-\imath}^{\bullet} \geqslant \varrho_{m_0} \Rightarrow \overline{\upsilon_j^{q_j}-\imath} \underset{\hbar_0}{\leqslant} \beta q_j\overline{\upsilon_j-\imath}\ {}_{j\rightsquigarrow\infty}\!\!\Rightarrow \overline{\upsilon-\imath} \underset{\hbar_0}{\leqslant} \beta\overline{\flat} \Rightarrow \flat \neq 0$$

$$\imath \text{ Umg } \exp \underset{\omega}{\Subset}|\hbar \subset \underset{\omega}{\subseteq}|\hbar$$

$$\underset{\omega}{\Subset}|\hbar \supset K \text{ cpt symm 0-nbhd } K \xrightarrow[\text{def}]{\exp} \underset{\omega}{\subseteq}|\hbar$$

$$\lightning \exp(K) \text{ not id-Umg } \Longrightarrow \bigvee \underset{\omega}{\subseteq}|\hbar \llcorner \exp(K) \ni \gamma_j \rightsquigarrow \imath$$

$$\hbar_0 \Subset \hbar_1 \Subset \hbar \underset{K \text{ cpt}}{\Longrightarrow} \bigvee_{\flat_j}^{K} \varepsilon_j = \curlywedge_{\flat}^{K} {}^{\hbar_1}\overline{\exp(\flat)\,\gamma_j - \imath}^{\bullet} = {}^{\hbar_1}\overline{\exp\left(\flat_j\right)\gamma_j - \imath}^{\bullet}$$

$$\lightning\ \varepsilon_j = 0 \Longrightarrow \exp\left(\flat_j\right)\ \gamma_j = \imath \Longrightarrow \gamma_j = \exp\left(\flat_j\right)^{-1} = \exp\left(-\flat_j\right) \in \exp(K)\ \lightning$$

$$0 < \varepsilon_j = {}^{\hbar_1}\overline{\exp\left(\flat_j\right)\gamma_j - \imath}^{\bullet} \leqslant {}^{\hbar_1}\overline{\exp(0)\,\gamma_j - \imath}^{\bullet} = {}^{\hbar_1}\overline{\gamma_j - \imath}^{\bullet} \rightsquigarrow 0$$

$$\Longrightarrow \exp\left(\flat_j\right)\ \gamma_j \rightsquigarrow \imath \underset{\text{Thm}}{\Longrightarrow} \begin{cases} \bigvee m_j \rightsquigarrow +\infty \\ m_j\left(\exp\left(\flat_j\right)\gamma_j - \imath\right) \underset{\hbar}{\overset{\text{cpt}}{\rightsquigarrow}} \flat \neq 0 \end{cases} \underset{\text{Thm}}{\Longrightarrow} \flat \in \underset{\omega}{\Subset}|\hbar$$

$$0 \in V \underset{\text{off}}{\Subset} K$$

$$V \times V \xrightarrow[\text{CampHaus}]{c} K \Longrightarrow \delta := \curlywedge_{\natural}^{K \llcorner V} {}^{\hbar_1}\overline{\exp(\natural) - \imath}^{\bullet} > 0$$