

$$\mathbb{C}\overline{\Gamma} \xleftarrow{a} \mathbb{1}_{\omega}^{\#} \triangleleft \mathbb{C}$$

$$\mathbb{1}_{\omega}^{\#} \triangleleft \mathbb{C} \xrightarrow[\text{hom}]{\gamma \mapsto \overline{\gamma}} \mathbb{C}\overline{\Gamma}$$

$$\overline{\gamma} = \sum_k^{\mathbb{N}} \gamma_k \overline{\Gamma}^k \in \mathbb{C}\overline{\Gamma} = \mathbb{1}$$

$$\overline{\gamma} \overline{\gamma'} = \overline{\gamma \gamma'} \text{ Einsetz-hom}$$

$${}^w \gamma = \sum_{0 \leq i} \gamma_i \overline{\Gamma}^i \Rightarrow {}^w (\gamma \gamma') = \sum_k^{\mathbb{N}} \overline{\Gamma}^k \sum_{i+j=k} \gamma_i \gamma'_j$$

$$\Rightarrow \overline{\gamma} \overline{\gamma'} = \sum_{0 \leq i} \gamma_i \overline{\Gamma}^i \sum_{0 \leq j} \gamma'_j \overline{\Gamma}^j = \sum_{0 \leq i,j} \gamma_i \gamma'_j \overline{\Gamma}^{i+j} = \sum_k^{\mathbb{N}} \overline{\Gamma}^k \sum_{i+j=k} \gamma_i \gamma'_j = \overline{\gamma \gamma'}$$

$$\text{Ex } {}^w \gamma = a\overline{\Gamma} + b \Rightarrow \overline{\gamma} = a\overline{\Gamma} + be \in \mathbb{1}$$

$$\sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma = \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma$$

$$\text{OE } \gamma \neq \text{cst} \Rightarrow \bigwedge_{\lambda \in \mathbb{C}} \bigvee_{\beta \neq 0} \bigvee_{\lambda \neq 0} \lambda - w\gamma = \beta (\lambda - w) \dots (n\lambda - w) \xrightarrow{\text{hom}} \lambda e - \mathbb{1}\gamma = \beta \underbrace{\lambda e - \mathbb{1}} \dots \underbrace{n\lambda e - \mathbb{1}}$$

$$\subset: \lambda \in \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma \Rightarrow \lambda e - \mathbb{1}\gamma \notin \mathbb{1}_{\mathbb{C}} \Rightarrow \bigvee_{1 \leq k \leq n} {}^k\lambda e - \mathbb{1} \notin \mathbb{1}_{\mathbb{C}} \Rightarrow \lambda_k \in \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma$$

$$\xRightarrow{w = {}^k\lambda} \lambda - {}^k\lambda\gamma = 0 \Rightarrow \lambda = {}^k\lambda\gamma \in \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma$$

$$\supset: \lambda \notin \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma \Rightarrow \prod_1^{\mathbb{1}} \lambda e - \mathbb{1}\gamma = e = \mathbb{1}(\lambda e - \mathbb{1}\gamma)$$

$$\Rightarrow \bigwedge_{1 \leq k \leq n} e = \beta \prod_i \lambda e - \mathbb{1}\gamma = \underbrace{{}^k\lambda e - \mathbb{1}} \beta \prod_{i \neq k} \lambda e - \mathbb{1}\gamma = \mathbb{1}\beta \prod_i \lambda e - \mathbb{1}\gamma = \mathbb{1}\beta \prod_{i \neq k} \lambda e - \mathbb{1}\gamma \underbrace{{}^k\lambda e - \mathbb{1}}$$

$$\Rightarrow {}^k\lambda e - \mathbb{1} \in \mathbb{1}_{\mathbb{C}} \Rightarrow {}^k\lambda \notin \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma \Rightarrow \bigwedge_{w \in \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma} {}^k\lambda \neq w \Rightarrow \lambda - w\gamma \neq 0 \Rightarrow \lambda \notin \sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma$$

$${}^{\mathbb{1}}\gamma = \int^{\mathbb{C}_R} w \gamma \overline{we - \mathbb{1}}^{-1}: R > \mathbb{1} \geq \gamma \overline{\sigma_{\mathbb{1}}|{}^{\mathbb{1}}\gamma}$$

$$\overline{we - \mathbb{1}}^{-1} = \overline{we - \frac{\mathbb{1}}{w}}^{-1} = \overline{w^{-1} e - \frac{\mathbb{1}}{w}}^{-1} = \overline{w^{-1} \sum_n \frac{\mathbb{1}^n}{w^n}} = \sum_n \frac{\mathbb{1}^n}{n w^{n+1}} \text{glm } \overline{w^n} = R$$

$$\Rightarrow \int^{\mathbb{C}_R} w \overline{we - \mathbb{1}}^{-1} = \sum_n \mathbb{1}^n \int^{\mathbb{C}_R} m^{-n} w^{-n-1} = \mathbb{1}^n$$

COR $\gamma \mapsto {}^{\mathbb{1}}\gamma$ unit hom $m = 0$