

$$\text{noeth } \mathbb{G} \Rightarrow X_{\Delta \mathbb{G}}^{\leq} \text{ noeth}$$

$$\mathcal{A} \triangleleft X_{\Delta \mathbb{G}}^{\leq} \ni X_{\gamma} = X^{\mu} \mu_{\gamma} = X^{\bar{\gamma}} \bar{\gamma} + \sum_{\mu < \bar{\gamma}} X^{\mu} \mu_{\gamma}$$

$$\mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\leq i} = \left\{ \begin{array}{l} 1 \in \mathcal{A} \\ \bar{1} \leq i \end{array} \right\} \triangleleft \mathbb{G} \xrightarrow{\text{noeth}} \bigvee_{\mathcal{F}_i \subset \mathcal{A}}^{\text{fin}} \left\{ 1 \in \mathcal{F}_i \right\} \mathbb{G} = \mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\leq i}$$

$$1 = \underbrace{X}_{i+1} \Rightarrow \mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\leq i} \subset \mathcal{A} \cap_{i+1} X_{\Delta \mathbb{G}}^{\leq i+1} \xrightarrow{\text{noeth}} \bigcup_i \mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\leq i} = \mathcal{A} \cap_k X_{\Delta \mathbb{G}}^{\leq k}$$

$$\gamma \in \mathcal{A} \Rightarrow \bar{\gamma} \in \mathcal{A} \cap_{\bar{\gamma}} X_{\Delta \mathbb{G}}^{\leq \bar{\gamma}} = \mathcal{A} \cap_{k \lambda \bar{\gamma}} X_{\Delta \mathbb{G}}^{\leq k \lambda \bar{\gamma}} \Rightarrow \bigvee_{a_1}^{\mathbb{G}} \bar{\gamma} = \sum_1^{k \lambda \bar{\gamma}} a_1 \Rightarrow$$

$$\mathcal{A} \ni X_{\gamma} - X^{\bar{\gamma} - k \lambda \bar{\gamma}} \sum_1^{k \lambda \bar{\gamma}} X_{a_1} = X^{\bar{\gamma}} \underbrace{\sum_1^{k \lambda \bar{\gamma}} a_1}_{= \bar{\gamma}}$$

$$+ \sum_{\mu < \bar{\gamma}} X^{\mu} \mu_{\gamma} - X^{\bar{\gamma} - k \lambda \bar{\gamma}} \sum_1^{k \lambda \bar{\gamma}} \overbrace{X^{k \lambda \bar{\gamma}} a_1}^{k \lambda \bar{\gamma}} + \sum_{\mu < k \lambda \bar{\gamma}} X^{\mu} \mu_{\gamma} a_1$$

$$= \sum_{\mu < \bar{\gamma}} X^{\mu} \mu_{\gamma} - \sum_1^{k \lambda \bar{\gamma}} \sum_{\mu < k \lambda \bar{\gamma}} X^{\overbrace{\bar{\gamma} - k \lambda \bar{\gamma} + \mu}^{< \bar{\gamma}}} \mu_{\gamma} a_1 \in_{\text{ind}} \left\{ \begin{array}{l} 1 \\ 1 \in \mathcal{F}_i \\ i \leq k \end{array} \right\} X_{\Delta \mathbb{G}}^{\leq}$$