

$$\mathbb{C} \triangleleft_{\omega} \ni \mathfrak{h} \text{ Stein} \Rightarrow \mathfrak{h} : \mathcal{U} \triangleleft_{\omega}^{\dagger} \mathbb{C} = 0$$

$$\begin{cases} \bigwedge_{UV} \mathbf{1} \in U \cap V \triangleleft_{\omega} \mathbb{C} \\ UV \mathbf{1} + VW \mathbf{1} + WU \mathbf{1}_{U \cap \bar{V} \cap W} = 0 \end{cases} \rightsquigarrow \begin{cases} V_U \mathbf{1} \in U \triangleleft_{\omega} \mathbb{C} \\ U \mathbf{1} - V \mathbf{1}_{U \cap \bar{V} \cap UV} \mathbf{1} \end{cases}$$

$$\mathfrak{h} \triangleleft_{\infty} \mathfrak{h} \triangleleft_{\omega}^{\circ} \mathbb{C} = 0 \Rightarrow \mathfrak{h} : \mathcal{U} \triangleleft_{\omega}^{\dagger} \mathbb{C} = 0$$

$$UV \mathbf{1} \in U \cap V \triangleleft_{\omega} \mathbb{C} : UV \mathbf{1} + VW \mathbf{1} + WU \mathbf{1}_{U \cap \bar{V} \cap W} = 0$$

$$\bigvee_{\text{part of unity}} \psi^{\alpha} \in \mathfrak{h} \triangleleft_{\infty} 0|1 \bigvee A \ni \alpha \wedge U_{\alpha} \in \mathcal{U} \text{ Trg } \psi^{\alpha} \in U_{\alpha}$$

$$\bigwedge_{\mathfrak{h} \in \mathfrak{h}} \bigvee \mathfrak{h} \in \Omega \subset \mathfrak{h} \bigwedge_{\alpha}^{A \perp A_{\Omega}} \psi^{\alpha} \frac{A}{\Omega} = 0 \Rightarrow U \mathbf{1} := \sum_{\alpha} \psi^{\alpha} U_{U_{\alpha}} \mathbf{1} \in U \triangleleft_{\infty} \mathbb{C}$$

$$0_{U \cap \bar{V} \cap U_{\alpha}} UV \mathbf{1} + V U_{\alpha} \mathbf{1} + U_{\alpha} U \mathbf{1}_{U \cap \bar{V} \cap U_{\alpha}} UV \mathbf{1} + V U_{\alpha} \mathbf{1} - U U_{\alpha} \mathbf{1}$$

$$\Rightarrow U \mathbf{1} - V \mathbf{1}_{U \cap \bar{V}} = \sum_{\alpha} \psi^{\alpha} \underbrace{U U_{\alpha} \mathbf{1} - V U_{\alpha} \mathbf{1}}_{U \cap \bar{V}} \sum_{\alpha} \psi^{\alpha} U V \mathbf{1}_{U \cap \bar{V} \cap UV}$$

$$\Rightarrow \bar{\partial}_U \mathbf{1} - \bar{\partial}_V \mathbf{1}_{U \cap \bar{V}} \bar{\partial}_{UV} \mathbf{1}_{U \cap \bar{V}} = 0 \Rightarrow \bigvee \mathfrak{q} \in \mathfrak{h} \triangleleft_{\infty} \mathfrak{h} \triangleleft_{\omega}^{\circ} \mathbb{C} : U \widehat{\mathfrak{q}} = \bar{\partial}_U \mathbf{1} \Rightarrow \bar{\partial} \mathfrak{q} = 0$$

$$\Rightarrow \mathfrak{q} \in \mathfrak{h} \triangleleft_{\infty} \mathfrak{h} \triangleleft_{\omega}^{\circ} \mathbb{C} = \mathfrak{h} \triangleleft_{\infty} \mathfrak{h} \triangleleft_{\omega}^{\circ} \mathbb{C} \Rightarrow \bigvee \mathfrak{r} \in \mathfrak{h} \triangleleft_{\infty} \mathbb{C} : \bar{\partial} \mathfrak{r} = \mathfrak{q}$$

$$U \mathbf{1} = U \mathbf{1} - U \widehat{\mathfrak{q}} \in U \triangleleft_{\infty} \mathbb{C} \Rightarrow \bar{\partial}_U \mathbf{1}_{\bar{U}} \bar{\partial}_U \mathbf{1} - \overbrace{\bar{\partial} \widehat{\mathfrak{q}}}^U = 0 \Rightarrow U \mathbf{1} \in U \triangleleft_{\omega} \mathbb{C}$$

$$U \mathbf{1} - V \mathbf{1}_{U \cap \bar{V}} \underbrace{U \mathbf{1} - U \widehat{\mathfrak{q}}}_{U \cap \bar{V}} - \underbrace{V \mathbf{1} - U \widehat{\mathfrak{q}}}_{U \cap \bar{V}} U \mathbf{1} - V \mathbf{1}_{U \cap \bar{V} \cap UV} \mathbf{1}$$