

$$U \underset{\text{off}}{\subset} \mathfrak{h} \Leftrightarrow \bigwedge_{h \in U} \bigvee_{r > 0} \mathfrak{h}_r^h \subset U$$

$$A \underset{\text{abg}}{\subset} \mathfrak{h} \Leftrightarrow \mathfrak{h} \perp A \subset \mathfrak{h}$$

$$A \subset \mathfrak{h} \underset{\text{Krit}}{\overset{\text{Folg}}{\Leftrightarrow}} \bigwedge_{\text{Folgen}} A \ni {}^n \mathfrak{U} \rightsquigarrow o \in \mathfrak{h} \rightsquigarrow o \in A$$

$$\Rightarrow: A \ni {}^n \mathfrak{U} \rightsquigarrow o \in \mathfrak{h}$$

$$o \in A$$

$$\nexists o \notin A \Rightarrow o \in \mathfrak{h} \perp A \subset \mathfrak{h} \Rightarrow \bigvee_{\varepsilon > 0} \mathfrak{h}_\varepsilon^o \subset U \Rightarrow \bigvee_m \bigwedge_{n \geq m} {}^n \mathfrak{U} | o \leq \varepsilon \Rightarrow {}^m \mathfrak{U} \in \mathfrak{h}_\varepsilon^o \subset U \Rightarrow {}^m \mathfrak{U} \in U \nexists {}^m \mathfrak{U} \nexists$$

$$\Leftarrow: \nexists A \not\subset \mathfrak{h} \Rightarrow \mathfrak{h} \perp A \not\subset \mathfrak{h} \Rightarrow \bigvee_o \bigwedge_{\varepsilon > 0} \mathfrak{h}_\varepsilon^o \not\subset \mathfrak{h} \perp A \Rightarrow \mathfrak{h}_\varepsilon^o \cap A \neq \emptyset$$

$$\Rightarrow \bigwedge_{n \geq 1} A \cap \mathfrak{h}_{<1/n}^o \neq \emptyset \Rightarrow \bigvee {}^n \mathfrak{U} \in A \cap \mathfrak{h}_{<1/n}^o \Rightarrow T \ni {}^n \mathfrak{U} \rightsquigarrow o \notin A \nexists$$

$$C \underset{\text{off}}{\overset{\text{abg}}{\subset}} \mathfrak{h} \Leftrightarrow C \subset \mathfrak{h} \supset C$$

$$U_i \subset \mathfrak{h} \Rightarrow \bigcup_i U_i \subset \mathfrak{h}$$

$$A_i \subset \mathfrak{h} \Rightarrow \bigcap_i A_i \subset \mathfrak{h}$$

$$\subset: h \in \bigcup_i U_i \Rightarrow \bigvee_{j \in I} h \in U_j \Rightarrow \bigvee_{r > 0} \mathfrak{h}_r^h \subset U_j \subset \bigcup_i U_i \Rightarrow \mathfrak{h}_r^h \subset U_j \subset \bigcup_i U_i$$

$$\subset: \mathfrak{h} \perp A_i \subset \mathfrak{h} \Rightarrow \mathfrak{h} \perp \bigcap_i A_i = \bigcup_i \overline{\mathfrak{h} \perp A_i} \subset \mathfrak{h} \Rightarrow \bigcap_i A_i \subset \mathfrak{h}$$

$$\begin{cases} U_n \subset \mathfrak{H} \Rightarrow \bigcap_n U_n \subset \mathfrak{H} \\ A_n \subset \mathfrak{H} \Rightarrow \bigcup_n A_n \subset \mathfrak{H} \end{cases}$$

$$\subset: o \in \bigcap_n U_n \Rightarrow \bigwedge_n o \in U_n \Rightarrow \bigvee_{r_n > 0} \mathfrak{H}_{\leq r_n}^o \subset U_n \Rightarrow \mathfrak{H}_{\leq \min r_n}^o = \bigcap_n \mathfrak{H}_{\leq r_n}^o \subset \bigcap_n U_n$$

$$\supset: \bigcup_n A_n \ni {}^i \mathcal{U} \rightsquigarrow o \in \mathfrak{H} \Rightarrow \bigvee_m \bigvee_{\text{Teilfolge}} A_m \ni {}^{j(i)} \mathcal{U} \rightsquigarrow o \Rightarrow o \in A_m \subset \bigcup_n A_n$$

$$/ \quad \emptyset \subset \mathfrak{H} \supset \mathfrak{H}$$