$$ {}^{\mathfrak{k}}\overline{\pi}\,\eta = {}^{\mathfrak{k}}\overset{\circ}{\eta} < +\infty \text{ halbnorm auf } {}^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K} $$

$$ p_{\mathfrak{k}_1} \vee \cdots \vee p_{\mathfrak{k}_n} = p_{\mathfrak{k}_1 \cup \cdots \cup \mathfrak{k}_n} $$

$$ {}^{\mathfrak{h}}_{\mathfrak{k}}\underset{0}{\overset{\leqslant}{\triangle}}\overset{\varepsilon}{\mathbb{K}} = \frac{\eta \in {}^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K}}{{}^{\mathfrak{k}}\overset{\circ}{\eta} \leqslant \varepsilon} $$

$$ {}^{\mathfrak{h}}_{\mathfrak{k}_1 \cup \cdots \cup \mathfrak{k}_n}\underset{0}{\overset{\leqslant}{\triangle}}\overset{\varepsilon}{\mathbb{K}} = {}^{\mathfrak{h}}_{\mathfrak{k}_1}\underset{0}{\overset{\leqslant}{\triangle}}\overset{\varepsilon}{\mathbb{K}} \cap \cdots \cap {}^{\mathfrak{h}}_{\mathfrak{k}_n}\underset{0}{\overset{\leqslant}{\triangle}}\overset{\varepsilon}{\mathbb{K}} $$

$$ {}^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K}:\mathcal{T} \text{ treu} $$

$$ \bigwedge_{\text{cpt } \mathfrak{k} \subset \mathfrak{h}} {}^{\mathfrak{k}}\overline{\pi}\,\eta = 0 \Longrightarrow \bigwedge_{\mathfrak{h} \in \mathfrak{h}} 0 = {}^{\mathfrak{h}}\overline{\pi}\,\eta = \overline{{}^{\mathfrak{h}}\eta} = 0 \Longrightarrow \eta = 0 $$

$$ {}^{\mathfrak{h}}\overset{\infty}{\triangle}\mathbb{K}:\mathcal{T}_b \underset{\text{stet}}{\sqsubset} {}^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K}:\mathcal{T} $$

$$ \mathcal{T} \cap {}^{\mathfrak{h}}\overset{\infty}{\triangle}\mathbb{K} \subset \mathcal{T}_b $$

$$^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K}:\mathcal{T} \text{ voll}$$

$$\underset{\text{CauFil}}{\sim}\ \mathcal{F} \subset 2^{\,^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K}}$$

$$\bigwedge_{\text{cpt } \mathfrak{k} \subset \mathfrak{h}} {}^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K} \xrightarrow[\text{stet}]{\wr_{\mathfrak{k}}} {}^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K}$$

$$^{\mathfrak{k}}\tilde{\eta} \leadsto \eta$$

$$^{\mathfrak{k}}\tilde{\mathcal{F}} = \frac{^{\mathfrak{k}}\tilde{M}}{M \in \mathcal{F}} \subset 2^{\,^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K}}$$

$$^{\mathfrak{k}}\tilde{M} \cap {}^{\mathfrak{k}}\tilde{M}, \supset {}^{\mathfrak{k}}(M \tilde{\cap} M,) \text{ FilterBasis}$$

$$\text{Filter } \wr_{\mathfrak{k}}(\mathcal{F}) := < {}^{\mathfrak{k}}\tilde{\mathcal{F}} > \subset 2^{\,^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K}}$$

$$\wr_{\mathfrak{k}}(\mathcal{F})\ \underset{\text{CauFil}}{\leadsto}$$

$$\text{Sei } V \in \mathcal{U}_{\,^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K}} \Rightarrow \bigvee_{\varepsilon > 0} V \supset {}^{\mathfrak{k}}\underset{0}{\overset{\leqslant \varepsilon}{\triangle}}\mathbb{K} \Rightarrow \bigvee_{M \in \mathcal{F}} M - M \subset {}^{\mathfrak{h}}_{\mathfrak{k}}\underset{0}{\overset{\leqslant \varepsilon}{\triangle}}\mathbb{K} \Rightarrow {}^{\mathfrak{k}}\tilde{M} - {}^{\mathfrak{k}}\tilde{M} \subset {}^{\mathfrak{k}}\underset{0}{\overset{\leqslant \varepsilon}{\triangle}}\mathbb{K}$$

$$^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K} = {}^{\mathfrak{k}}\underset{0}{\overset{\infty}{\triangle}}\mathbb{K} \text{ voll } \Rightarrow \bigvee {}^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K} \ni 1_{\mathfrak{k}} \sim \wr_{\mathfrak{k}}(\mathcal{F})$$

$$\text{cpt } H \subset \mathfrak{k} \subset \mathfrak{h} \Rightarrow 1_H \sim \wr_H(\mathcal{F}) = \wr_H\left(\wr_{\mathfrak{k}}(\mathcal{F})\right) \underset{\wr_H \text{ lin stet}}{\leadsto} \wr_H 1_{\mathfrak{k}} = {}^{H}\tilde{1}_{\mathfrak{k}} \Rightarrow 1_H = {}^{H}\tilde{1}_{\mathfrak{k}}$$

$$\underset{\mathfrak{h} \text{ lic-cpt}}{\Rightarrow} \begin{cases} \bigvee 1 \in {}^{\mathfrak{h}}\underset{0}{\triangle}\mathbb{K} \\ {}^{\mathfrak{k}}\tilde{1} = 1_{\mathfrak{k}} \end{cases}$$

$$\mathcal{F} \leadsto 1 \text{ d.h. } 1 + \mathcal{U}_{\mathfrak{h}} \subset \mathcal{F}$$

$$\text{cpt } \mathfrak{k} \subset \mathfrak{h} \Rightarrow {}^{\mathfrak{k}}\tilde{1} + \mathcal{U}_{\mathfrak{k}} \subset \wr_{\mathfrak{k}}(\mathcal{F}) \Rightarrow \bigwedge_{\varepsilon > 0} \bigvee_{M}^{\mathcal{F}} \underline{{}^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K}:{}^{\mathfrak{k}}\tilde{1}}_{\varepsilon} \supset {}^{\mathfrak{k}}\tilde{M}$$

$$\Rightarrow \bigwedge_{\eta \in M} {}^{\mathfrak{k}}\overline{\eta - 1} = \overline{\underbrace{{}^{\mathfrak{k}}\eta}_{\in {}^{\mathfrak{k}}\tilde{M}} - {}^{\mathfrak{k}}1} \leqslant \varepsilon \Rightarrow M \subset \underline{\mathfrak{h}:{}^{\mathfrak{k}}\underset{0}{\triangle}\mathbb{K}:1}_{\varepsilon} \in \mathcal{F}$$

$$\bar{h} \text{ abz in } \infty\,(\sigma \text{ cpt }) \Rightarrow \begin{cases} \bar{h} = \bigcup_n \bar{\lambda}_n \\ \text{cpt } \bar{\lambda}_n \subset \underbrace{\bar{\lambda}_{n+1}} \end{cases}$$

$$\bar{h}\sigma \text{ cpt } \Rightarrow {}^{\bar{h}}\triangle_0 \mathbb{K} \text{ metrisierbar Frech}$$

$$p_{\bar{\lambda}_1} \leqslant p_{\bar{\lambda}_2} \leqslant \cdots \text{ abz treu basis}$$

$${}^{\bar{h}}\triangle^{\infty}_0 \mathbb{K} = {}^{\bar{h}}\triangle_0 \mathbb{K} \cap {}^{\bar{h}}\triangle^{\infty} \mathbb{K} \sqsubset {}^{\bar{h}}\triangle^{\infty} \mathbb{K}$$

$$\text{stet } \daleth_n \rightsquigarrow \daleth \Rightarrow \daleth \text{ stet}$$

$${}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} = \frac{\daleth \in {}^{\bar{h}}\triangle_0 \mathbb{K}}{{}^{\bar{h} \llcorner \bar{\lambda}}\tilde{\daleth} = 0} = \frac{\daleth \in {}^{\bar{h}}\triangle_0 \mathbb{K}}{\text{Trg } \daleth \subset \bar{\lambda}} \subset {}^{\bar{h}}\triangle_0 \mathbb{K}$$

$$\text{Trg } \daleth = \overline{\frac{h \in \bar{h}}{{}^{h}\daleth \neq 0}}$$

$${}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} \sqsubset {}^{\bar{h}}\triangle_0 \mathbb{K}$$

$${}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} = \bigcap_{h}^{\bar{h} \llcorner \bar{\lambda}} \ker {}^{h}\wr \sqsubset {}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K}$$

$${}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} \in \triangledown^{n}_0 \mathbb{K} \text{ voll BanachRaum norm } p_{\bar{\lambda}}$$

$$\text{normiert } {}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} : p_{\bar{\lambda}} \underset{\text{monotop}}{\sqsubset} {}^{\bar{h}}\triangle_0 \mathbb{K} : \mathcal{T} \text{ voll } \Rightarrow {}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} \text{ voll}$$

$$\text{cpt } H \subset \bar{\lambda} \subset \bar{h} \Rightarrow {}^{\bar{h}}\triangle^{H}_0 \mathbb{K} \underset{\text{monometrie}}{\sqsubset} {}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} \subset {}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} \underset{\text{monotop}}{\Rightarrow}$$

$${}^{\bar{h}}\triangle^{0}_0 \mathbb{K} = \frac{\daleth \in {}^{\bar{h}}\triangle_0 \mathbb{K}}{\bigvee_{\text{cpt } \bar{\lambda} \subset \bar{h}} {}^{\bar{h} \llcorner \bar{\lambda}}\tilde{\daleth} = 0} = \frac{\daleth \in {}^{\bar{h}}\triangle_0 \mathbb{K}}{\text{cpt Trg } \daleth \subset \bar{h}} = \bigcup_{\text{cpt } \bar{\lambda} \subset \bar{h}} {}^{\bar{h}}\triangle^{\bar{\lambda}}_0 \mathbb{K} \subset {}^{\bar{h}}\triangle^{\infty}_0 \mathbb{K} \subset {}^{\bar{h}}\triangle_0 \mathbb{K}$$

$$\sigma \text{ cpt } \bar{h} = \bigcup_n \bar{\lambda}_n \Rightarrow {}^{\bar{h}}\triangle^{0}_0 \mathbb{K} = \bigcup_n {}^{\bar{h}}\triangle^{\bar{\lambda}_n}_0 \mathbb{K} \text{ LB-Raum Top } \mathcal{T}_c$$

$$\bigwedge_n \text{ Ban } {}^{\bar{h}}\triangle^{\bar{\lambda}_n}_0 \mathbb{K} \subset {}^{\bar{h}}\triangle^{0}_0 \mathbb{K}$$

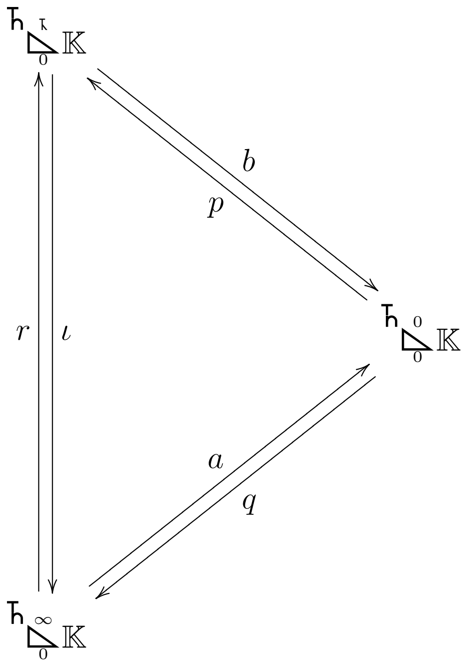
$$\bar{\lambda}_n \subset \bar{\lambda}_{n+1} \Rightarrow {}^{\bar{h}}\triangle^{\bar{\lambda}_n}_0 \mathbb{K} \underset{\text{monotop}}{\sqsubset} {}^{\bar{h}}\triangle^{\bar{\lambda}_{n+1}}_0 \mathbb{K}$$

$$\text{cpt } \bar{\lambda} \subset \hbar \Rightarrow \bigvee_n \bar{\lambda}_n \supset \bar{\lambda} \Rightarrow {}^{\hbar}\triangle^{\bar{\lambda}}_0 \mathbb{K} \sqsubset {}^{\hbar}\triangle^{\bar{\lambda}_n}_0 \mathbb{K} \Rightarrow \text{ Beh}$$

$$\text{Cor } {}^{\hbar}\triangle^{0}_0 \mathbb{K} : \mathcal{T}_c \text{ voll}$$

$${}^{\hbar}\triangle^{0}_0 \mathbb{K} : \mathcal{T}_c \underset{\text{stet lin}}{\sqsubset} {}^{\hbar}\triangle^{\infty}_0 \mathbb{K} : \mathcal{T}_b \underset{\text{stet lin}}{\sqsubset} {}^{\hbar}\triangle_0 \mathbb{K} : \mathcal{T}$$

$$\mathcal{T}_c \supset \mathcal{T}_b \supset \mathcal{T}$$



$${}^{\hbar}\triangle^{\omega}_0 \mathbb{K} = \overline{{}^{\hbar}\triangle^{0}_0 \mathbb{K}}^{\,{}^{\hbar}\triangle^{\infty}_0 \mathbb{K}} = \frac{\eta \in {}^{\hbar}\triangle_0 \mathbb{K}}{\bigwedge_{\varepsilon > 0} \bigvee_{\text{cpt } \bar{\lambda} \subset \hbar} {}^{\hbar \setminus \bar{\lambda}}|\eta| \leqslant \varepsilon}$$

vanish at ∞

$${}^{\hbar}\triangle^{0}_0 \mathbb{K} \sqsubset {}^{\hbar}\triangle^{\omega}_0 \mathbb{K} \sqsubset {}^{\hbar}\triangle^{\infty}_0 \mathbb{K} \sqsubset {}^{\hbar}\triangle_0 \mathbb{K}$$