

$$K \supset \mathbb{Q}_p \text{ fin ext}$$

$$n = [K/\mathbb{Q}_p] < \infty$$

$$K \xrightarrow[\text{norm}]{N} \mathbb{Q}_p$$

$$N(z) \in \mathbb{Q}_p$$

$$|z|_p = |N(z)|_p^{1/n}$$

K voll/loc cpt/tot unzush

$$\text{max Id } \mathfrak{m}_K \quad \frac{z \in K}{|z|_p < 1}$$

\cap

$$\text{cpt Ring } \mathcal{O}_K \quad \frac{z \in K}{|z|_p \leq 1}$$

$\downarrow \pi$

$$\text{fin field } k_K \quad \mathbb{F}_{p^e}$$

$$|zw|_p = |z|_p |w|_p$$

$$|z+w|_p \leq \max\{|z|_p, |w|_p\}$$

cpt/discret \Rightarrow endlich