

$$\mathbb{Q} \subset \mathbb{Q} \xrightarrow{p} \mathbb{Q}^G \quad \mathbb{R}^{d_1} \times \mathbb{C}^{d_2}$$

$$\mathbb{U} \quad \mathbb{U} \quad \mathbb{U}$$

$$\mathbb{Z} \subset \mathbb{Z} \xrightarrow{\sim} \mathbb{Z}^G \quad \mathbb{Z}^{d_1 + d_2}$$

$$\text{abel } G \xrightarrow{\varrho} \mathbb{C}^x$$

$${}^s_8\mathbb{Q}_\varrho^{-1} = \prod_{P \triangleleft Z} \left(1 - \frac{\varrho(\sigma_P)}{\overline{Z \Gamma P}}^s \right)$$

$${}^s_8\mathbb{Q}_G = \prod_{\varrho} \overset{\ddagger}{G} {}^s_8\mathbb{Q}_\varrho$$

$${}^s_8\mathbb{Q} = \sum_{N \triangleleft Z} \overline{N}^{-s} = \prod_{P \triangleleft Z} \left(1 - \overline{Z \Gamma P}^{-s} \right)^{-1}$$

$${}^s_\infty\mathbb{Q} = \left(\frac{\Gamma_{s/2}}{\pi^{s/2}} \right)^{d_1} \left(\frac{\Gamma_s}{(2\pi)^s} \right)^{d_2}$$