$$\mathbb{F} = \mathbb{F}_q$$

$$\sharp\mathbb{F} = q$$

$${}^{\ell}\mathbb{F} \ni \begin{bmatrix} {}^{1}\lrcorner \\ \vdots \\ {}^{\ell}\lrcorner \end{bmatrix} = \dot{\lrcorner} \text{ Nachrichten}$$

$$\begin{tikzcd} \dot{J}.\,{}^{\ell}\mathbb{F} & \\ \sqcap & {}^{\ell}\mathbb{F} \arrow[ul, "\dot{J}.", "\asymp"'] \arrow[dl, "\dot{J}."] \\ {}^{n}\mathbb{F} & \end{tikzcd}$$

$$\dot{J}. = \begin{bmatrix} \dot{J}_1 & \dots & \dot{J}_\ell \end{bmatrix}$$

$$\text{rg } \dot{J}. = \ell \Longrightarrow \ell \text{ freie Spalten}$$

$${}^{\ell}\mathbb{F} \ni \begin{bmatrix} {}^{1}\lrcorner \\ \vdots \\ {}^{n}\lrcorner \end{bmatrix} = \dot{\lrcorner} \in {}^{n}\mathbb{F} \sqsupset \dot{J}.\,{}^{\ell}\mathbb{F} \text{ lin code}$$

$$\dot{J}.\,{}^{\ell}\mathbb{F} = \mathbb{F} < \dot{J}_1 \cdots \dot{J}_\ell > \text{ Spaltenraum}$$

$$\begin{tikzcd} \mathcal{G}_{-\dot{\surd}.} & \\ \sqcap & {}^{\ell}\mathbb{F} \arrow[ul, "\frac{\dot{I}.}{-\dot{\surd}.}", "\asymp"'] \arrow[dl, "\frac{\dot{I}.}{-\dot{\surd}.}"] \\ {}^{n}\mathbb{F} & \end{tikzcd}$$

$${}^{n}\mathbb{F} \sqsupset \frac{\dot{I}.}{-\dot{\surd}.}\,{}^{\ell}\mathbb{F} = \mathcal{G}_{-\dot{\surd}.}$$