

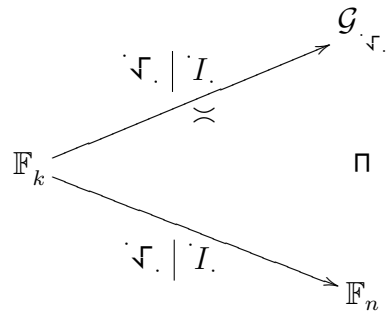
$$\mathbb{F} = \mathbb{F}_q$$

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

$\mathbb{F}_k \ni \uparrow = [\uparrow_1 \dots \uparrow_k]$ Prüfzeichen

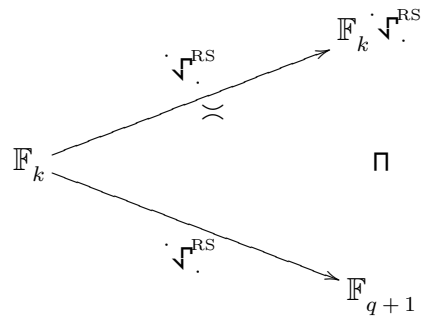
$\downarrow \in {}^k\mathbb{F}_n$ Kontrollmatrix

$$\downarrow \cdot \uparrow = 0 \in {}^k\mathbb{F}_\ell$$



$\downarrow \in {}^k\mathbb{F}_\ell$ Prüfmatrix

$$\downarrow \mid I \cdot \frac{I}{-\downarrow} = \downarrow \cdot I - I \cdot \downarrow = 0$$



$$\downarrow^{\text{RS}} = \begin{array}{c|c|c|c|c|c} 0 & 0^0 & 1^0 & 2^0 & \dots & (q-1)^0 \\ 0 & 0^1 & 1^1 & 2^1 & \dots & (q-1)^1 \\ + & & & & \dagger & \\ \hline 1 & 0^{k-1} & 1^{k-1} & 2^{k-1} & \dots & (q-1)^{k-1} \end{array} \in {}^k\mathbb{F}_{q+1}$$

$$d_{\text{RS}} < k$$

k Spalten $j_1 < \dots < j_k$

$$\text{if } 0 < j_1 < \dots < j_k \Rightarrow \det [\mathcal{A}^{j_1} \dots \mathcal{A}^{j_k}] = \det \begin{array}{c|c|c|c} j_1^0 & j_2^0 & \dots & j_k^0 \\ \hline j_1^1 & j_2^1 & \dots & j_k^1 \\ \hline + & + & \dagger & + \\ \hline j_1^{k-1} & j_2^{k-1} & \dots & j_k^{k-1} \end{array} = \prod \overbrace{j_p - j_q} \neq 0$$

$$\text{if } 0 = j_1 < \dots < j_k \Rightarrow \begin{array}{c} \left[\begin{array}{c} 0 \\ \vdots \\ 0 \\ 1 \end{array} \right] \\ \text{unabh} \end{array} \left[\begin{array}{c} \mathcal{A}^{j_2} \dots \mathcal{A}^{j_k} \\ \text{lin unabh} \end{array} \right]$$