



From MCE
to MEDS

1

equivalence
relation



2

zero knowledge
identification scheme



3

signature scheme!

Fiat-Shamir

1 → 2

SETUP

- Assume parameter set q, n, m, k . and "starting" code \mathcal{C}_0
- Generate **secret key** $A \in \text{GL}_m(q)$, $B \in \text{GL}_n(q)$
- Generate **public key** $\mathcal{C}_1 = A\mathcal{C}_0B$

$$\begin{array}{c} \mathcal{C}_0 \\ \downarrow (A, B) \\ \mathcal{C}_1 \end{array}$$



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COMMIT

- Generate **ephemeral** $\tilde{A} \in \text{GL}_m(q), \tilde{B} \in \text{GL}_n(q)$
- Generate **ephemeral code** $\tilde{\mathcal{C}} = \tilde{A}\mathcal{C}_0\tilde{B}$

$$\begin{array}{ccc}
 \mathcal{C}_0 & \xrightarrow{(\tilde{A}, \tilde{B})} & \tilde{\mathcal{C}} \\
 (A, B) \downarrow & & \\
 \mathcal{C}_1 & &
 \end{array}$$