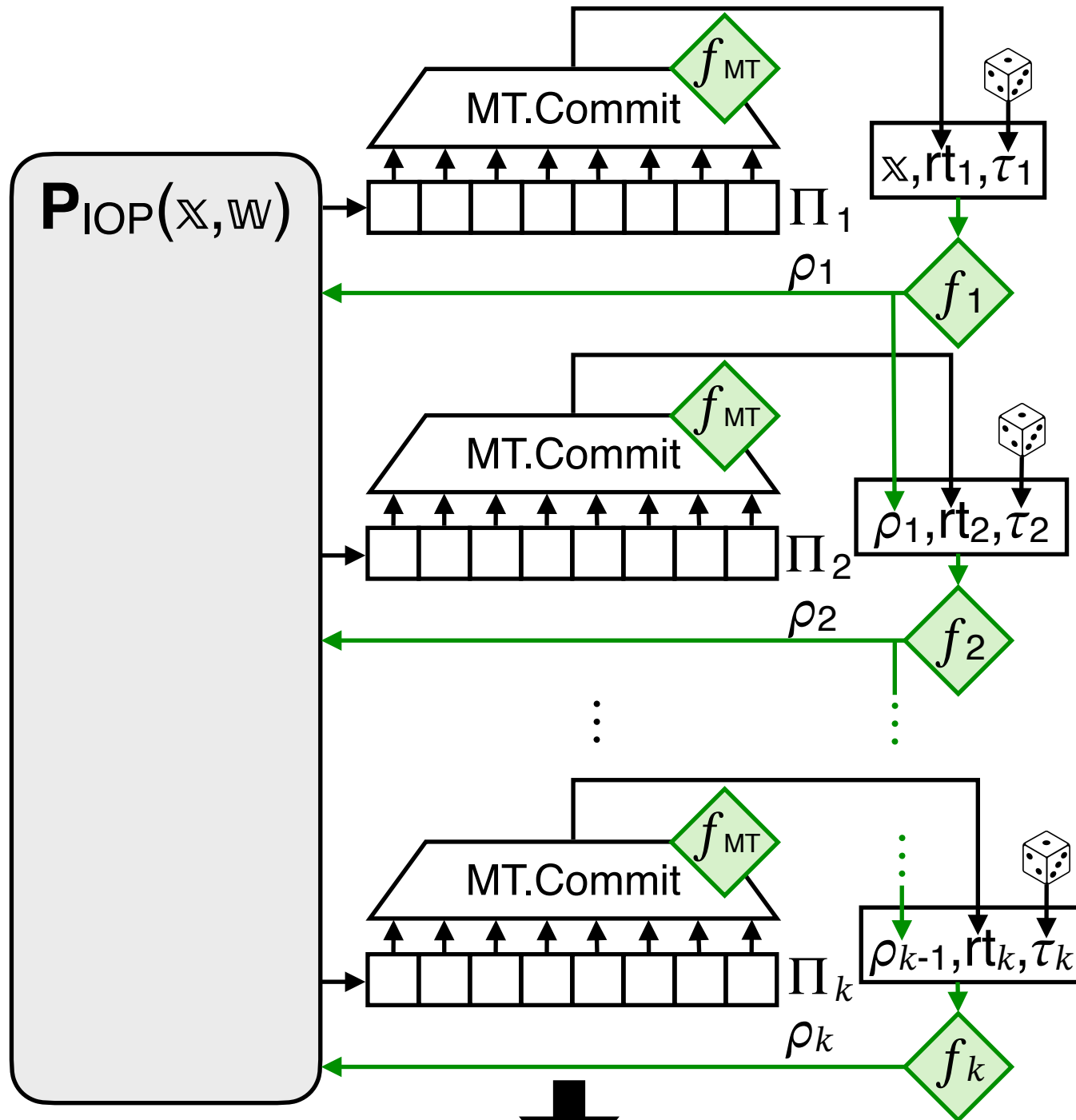
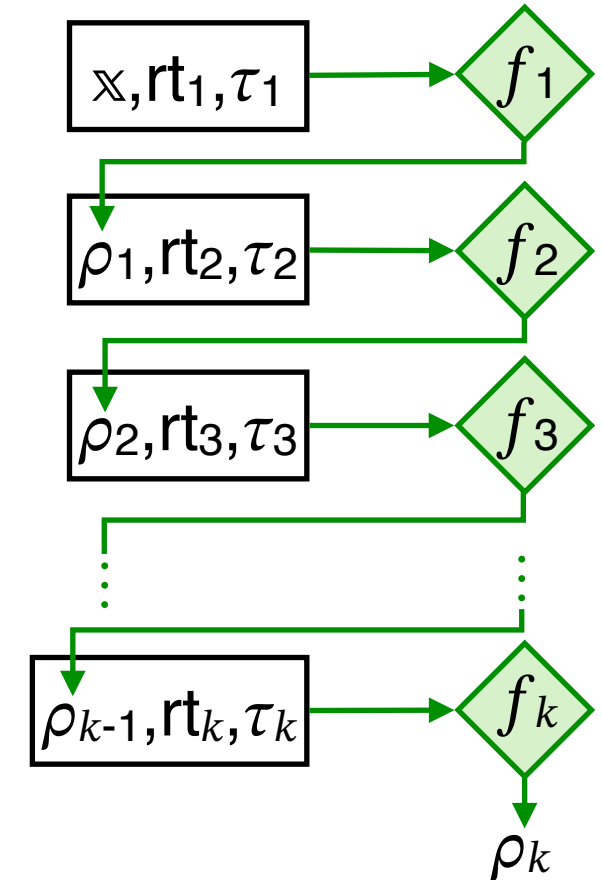


$\mathcal{P}(\mathbb{X}, \mathbb{W})$


IOP verifier queries: (Q_1, \dots, Q_k)
 IOP oracle answers: $(\mathbf{a}_1, \dots, \mathbf{a}_k)$
 MT proofs: $(\text{pf}_1, \dots, \text{pf}_k)$
 $\pi := ((\text{rt}_i, Q_i, \mathbf{a}_i, \text{pf}_i, \tau_i))_{i \in [k]}$

 $\mathcal{V}(\mathbb{X}, \pi)$

- parse π as $((\text{rt}_i, Q_i, \mathbf{a}_i, \text{pf}_i, \tau_i))_{i \in [k]}$
- derive IOP randomness



- check MT proofs
 $\bigwedge_{i \in [k]} \text{MT.Check} \diamond_{f_{\text{MT}}} (\text{rt}_i, Q_i, \mathbf{a}_i, \text{pf}_i)$
- check IOP decision

$\mathbf{V}_{\text{IOP}}[Q_i, \mathbf{a}_i]_{i \in [k]}(\mathbb{X}, (\rho_1, \dots, \rho_k))$