

$$x \sim y \quad \sum_{i=1}^N \mathbb{1}(x_i \neq y_i) = I \quad \left\{ \begin{array}{l} N \\ t(\epsilon) \leq (\frac{1}{\epsilon} \log N) \end{array} \right.$$

$$\rho(x, y) = \sum_{i=1}^N \mathbb{1}(x_i \neq y_i) + \max_i \|M(x_i, \cdot) - M(y_i, \cdot)\|_{TV}$$

$$\rho(x, y) = 1 + \|M(x_i, \cdot) - M(y_i, \cdot)\|_{TV} \quad \left\{ \begin{array}{l} M(x_i, \cdot) \\ > M(y_i, \cdot) \\ M(x_i, \cdot) \end{array} \right.$$

$$\mathbb{E} \rho(x, y) = \mathbb{E} \left[\sum_{i=1}^N P_{x_i} + 1 \right] \quad \left\{ \begin{array}{l} P_{x_i} \\ > P_{y_i} \\ P_{x_i} \end{array} \right.$$

