

$$x \sim y \iff \sum_{i=1}^N \mathbb{1}(x_i \neq y_i) = 1 \quad \left( N \text{ } \epsilon(\epsilon) \leq \left(\frac{1}{2} - \log_2 N\right) \right)$$
$$\rho(x, y) = \sum_{i=1}^N \mathbb{1}(x_i \neq y_i) + \max_x \|M(x, \cdot) - M(y, \cdot)\|_{TV}$$
$$\rho(x, y) = 1 + \|M(x, \cdot) - M(y, \cdot)\|_{TV} \quad \left. \begin{array}{l} M(x_i, \theta) \\ > M(y_i, \theta) \\ \frac{M(x_i, \theta)}{M(y_i, \theta)} \end{array} \right\}$$
$$\mathbb{E} \rho(x, y) = 1 + \left\| \sum_{i=1}^N P_i^{x_i, y_i} \right\|_{TV} \quad \left( \frac{1}{1 - P_i^{x_i, y_i}} \right)$$

