



$$\overline{M}_{\hat{f}}(|\text{Rips}_{\delta}(X_n)|, \mathcal{I})$$

$$\overline{M}_{\hat{f}}^{\Delta}(\text{Rips}_{\delta}^1(X_n), \mathcal{I})$$

$$\overline{M}_{\hat{f}}^{\bullet}(\text{Rips}_{\delta}^1(X_n), \mathcal{I})$$