

Figure 1: Comparison of the performance of the proposed method with the existing methods.

The figure displays a 4x4 grid of plots comparing the performance of the proposed method (Proposed) against four existing methods: Lasso, Ridge, and two others (likely Elastic Net and AIC, based on common statistical methods). The rows represent different datasets (I, II, III, IV) and the columns represent different metrics (MSE, MAE, RMSE, and AIC). Each plot shows the performance of the methods across various values of the regularization parameter λ (log scale, from 10^{-4} to 10^4). The proposed method consistently shows the lowest error rates across all metrics and datasets, indicating superior performance.

Row 1: Dataset I

- MSE:** The proposed method shows the lowest MSE, followed by Ridge, Lasso, and the other two methods.
- MAE:** The proposed method shows the lowest MAE, followed by Ridge, Lasso, and the other two methods.
- RMSE:** The proposed method shows the lowest RMSE, followed by Ridge, Lasso, and the other two methods.
- AIC:** The proposed method shows the lowest AIC, followed by Ridge, Lasso, and the other two methods.

Row 2: Dataset II

- MSE:** The proposed method shows the lowest MSE, followed by Ridge, Lasso, and the other two methods.
- MAE:** The proposed method shows the lowest MAE, followed by Ridge, Lasso, and the other two methods.
- RMSE:** The proposed method shows the lowest RMSE, followed by Ridge, Lasso, and the other two methods.
- AIC:** The proposed method shows the lowest AIC, followed by Ridge, Lasso, and the other two methods.

Row 3: Dataset III

- MSE:** The proposed method shows the lowest MSE, followed by Ridge, Lasso, and the other two methods.
- MAE:** The proposed method shows the lowest MAE, followed by Ridge, Lasso, and the other two methods.
- RMSE:** The proposed method shows the lowest RMSE, followed by Ridge, Lasso, and the other two methods.
- AIC:** The proposed method shows the lowest AIC, followed by Ridge, Lasso, and the other two methods.

Row 4: Dataset IV

- MSE:** The proposed method shows the lowest MSE, followed by Ridge, Lasso, and the other two methods.
- MAE:** The proposed method shows the lowest MAE, followed by Ridge, Lasso, and the other two methods.
- RMSE:** The proposed method shows the lowest RMSE, followed by Ridge, Lasso, and the other two methods.
- AIC:** The proposed method shows the lowest AIC, followed by Ridge, Lasso, and the other two methods.