

# Distance Profile Layer for Binary Classification and Density Estimation

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Supplementary materials

## 1 Experiment 1 – Classification

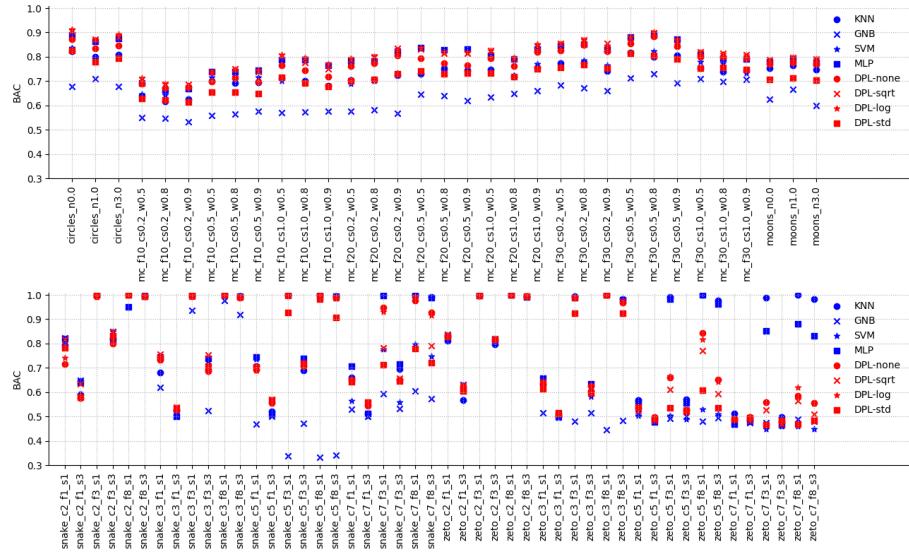


Figure 1: Experiment 1 – synthetic datasets

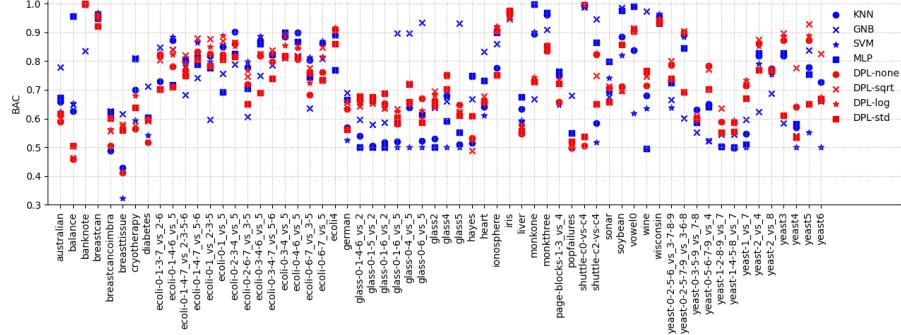


Figure 2: Experiment 1 – real-world datasets

## 2 Experiment 2 – Density estimation

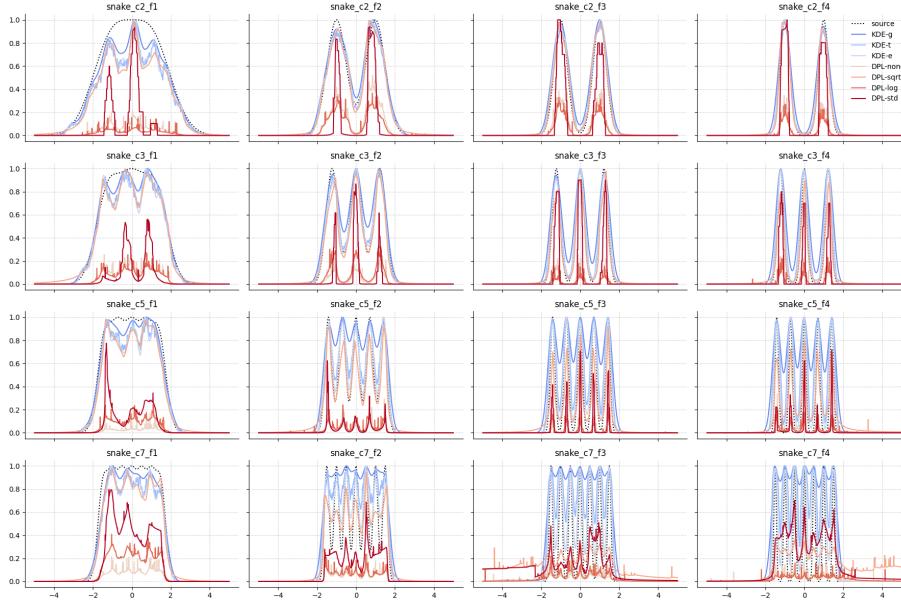


Figure 3: Experiment 2 – univariate dataset

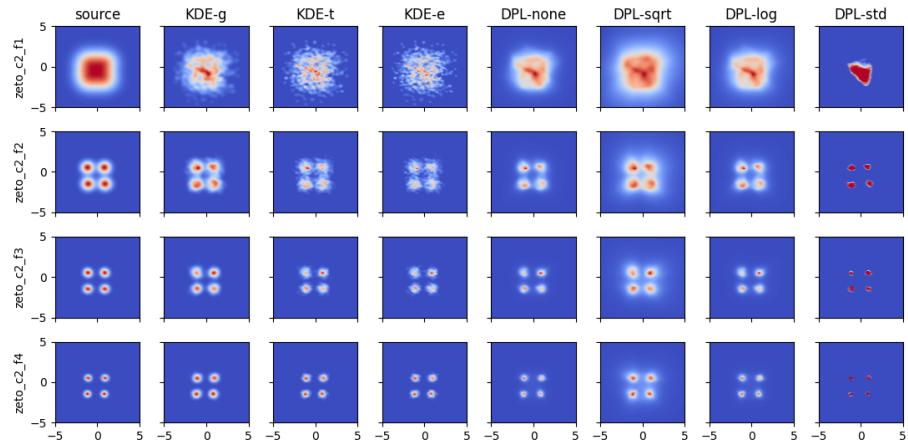


Figure 4: Experiment 2 – planar dataset, 4 centroids

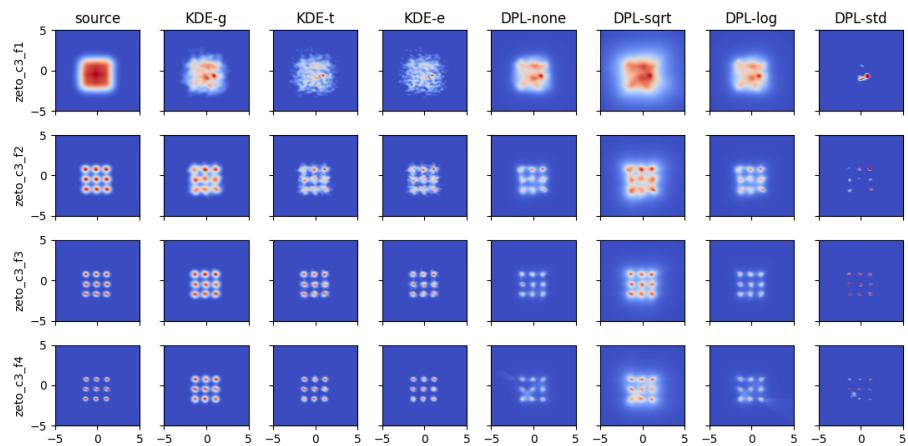


Figure 5: Experiment 2 – planar dataset, 9 centroids

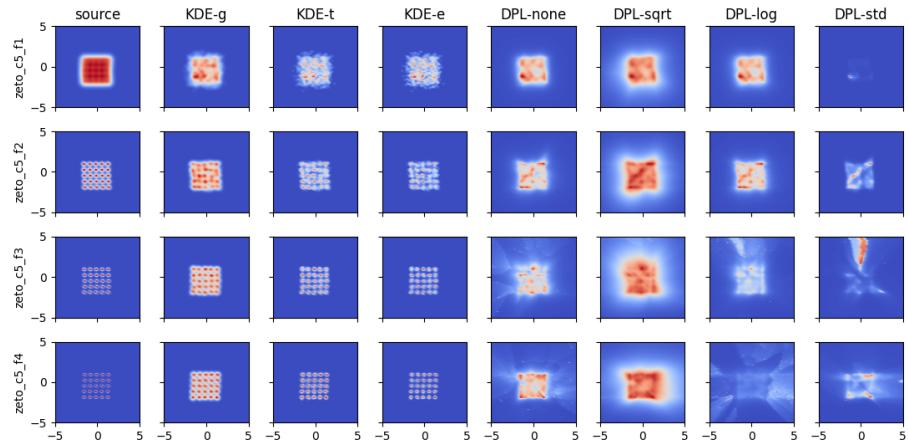


Figure 6: Experiment 2 – planar dataset, 25 centroids

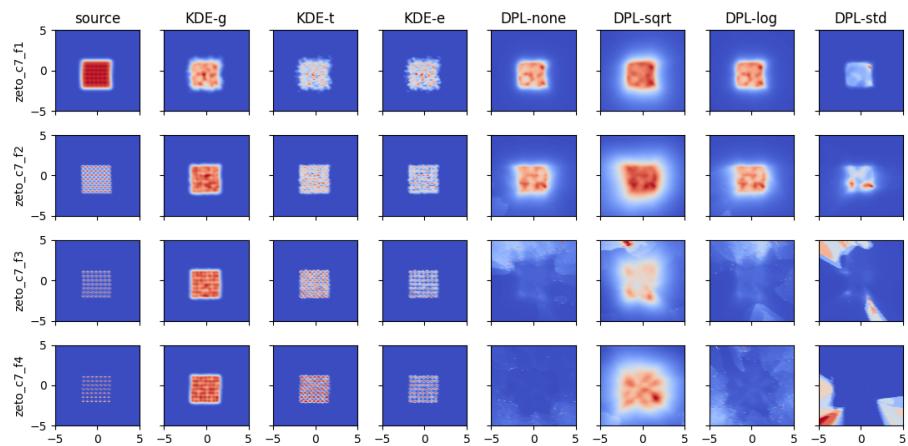


Figure 7: Experiment 2 – planar dataset, 49 centroids

### 3 Experiment 3 – Method configuration

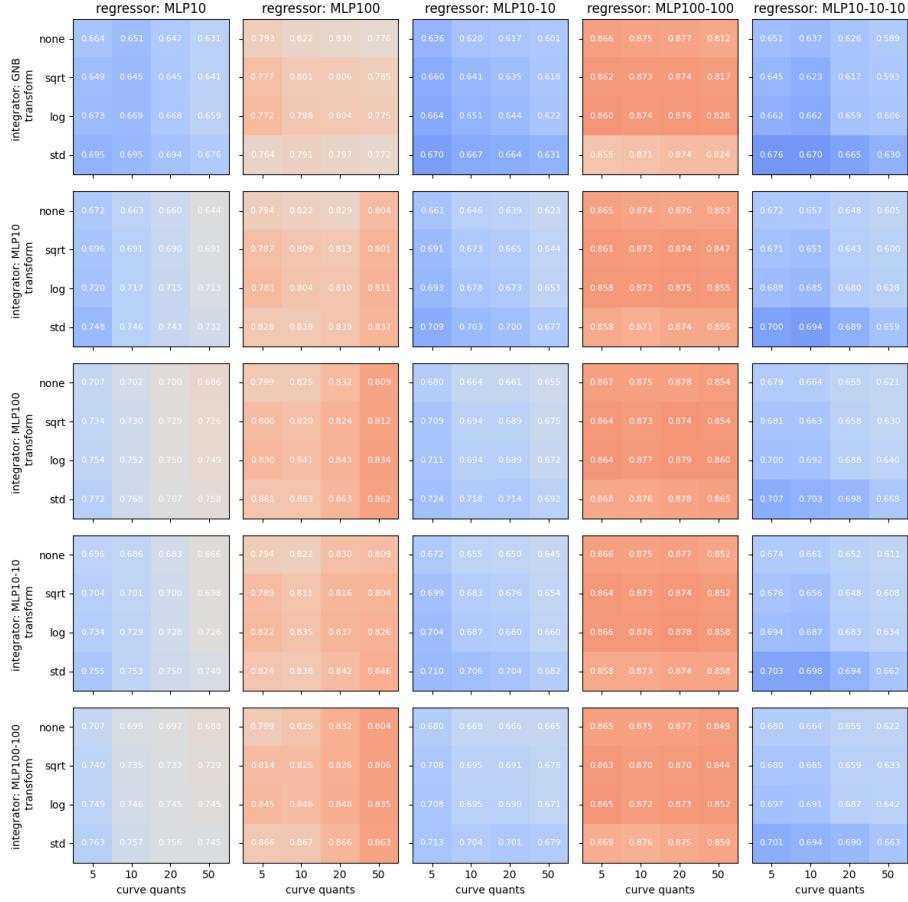


Figure 8: Experiment 3 – Balanced classification problem: Balanced accuracy score for all considered architectures

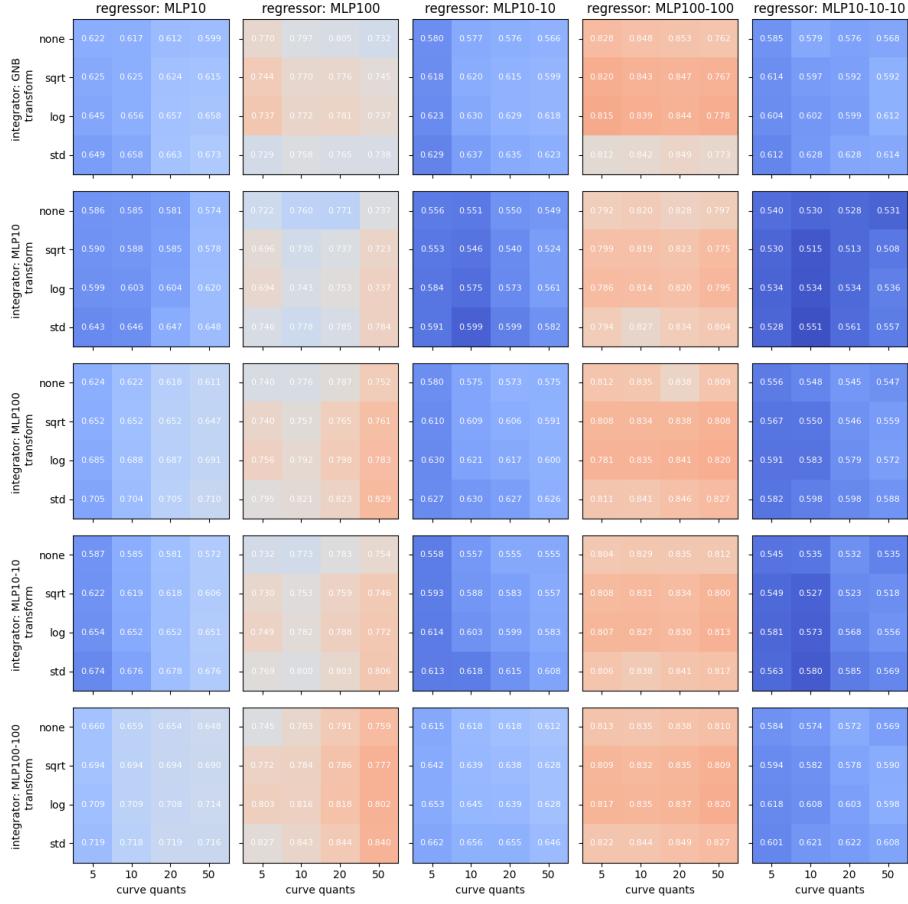


Figure 9: Experiment 3 – Imbalanced classification problem IR=3: Balanced accuracy score for all considered architectures

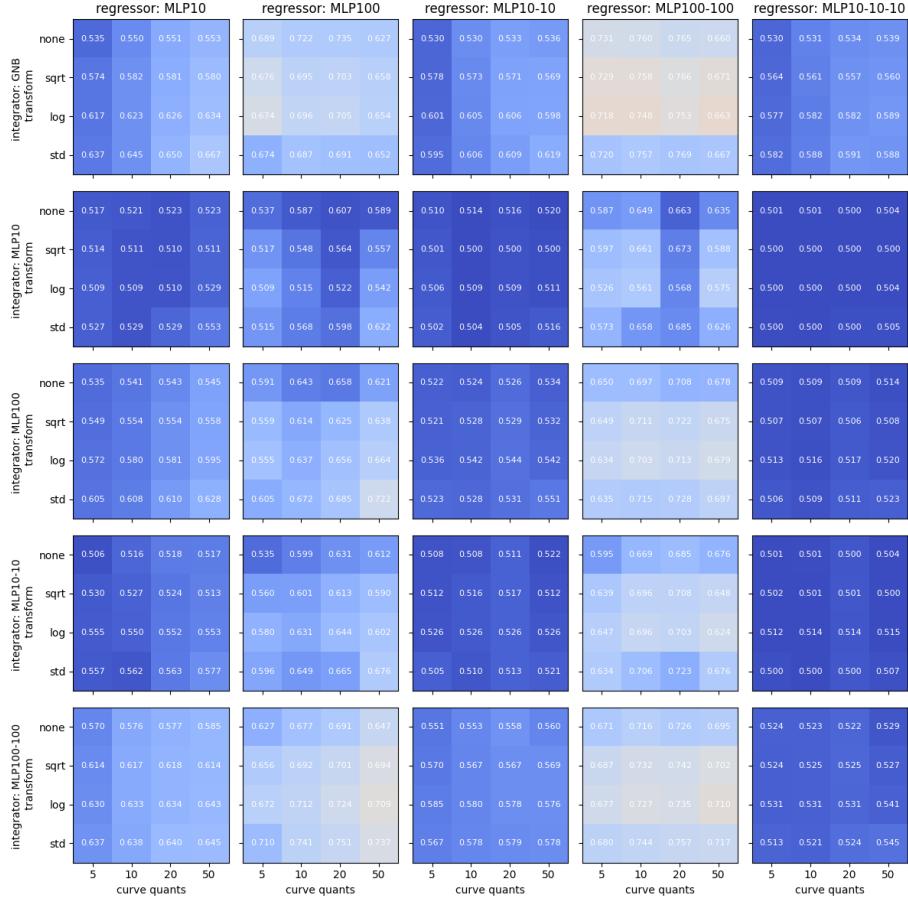


Figure 10: Experiment 3 – Imbalanced classification problem IR=9: Balanced accuracy score for all considered architectures

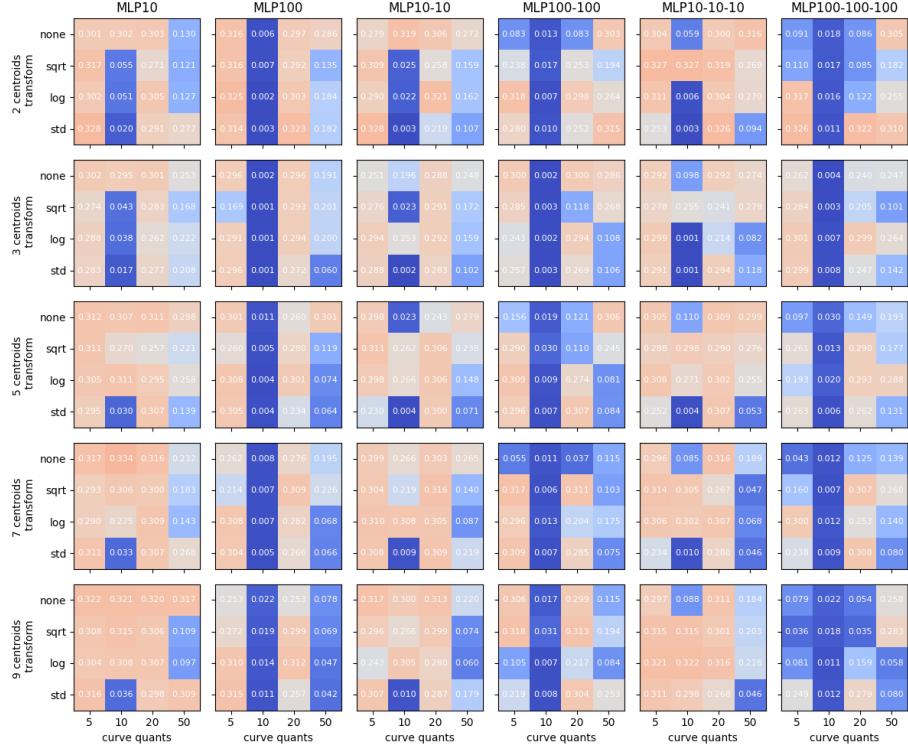


Figure 11: Experiment 3 – Density estimation: MSE for all considered architectures and datasets with dispersion factor = 1

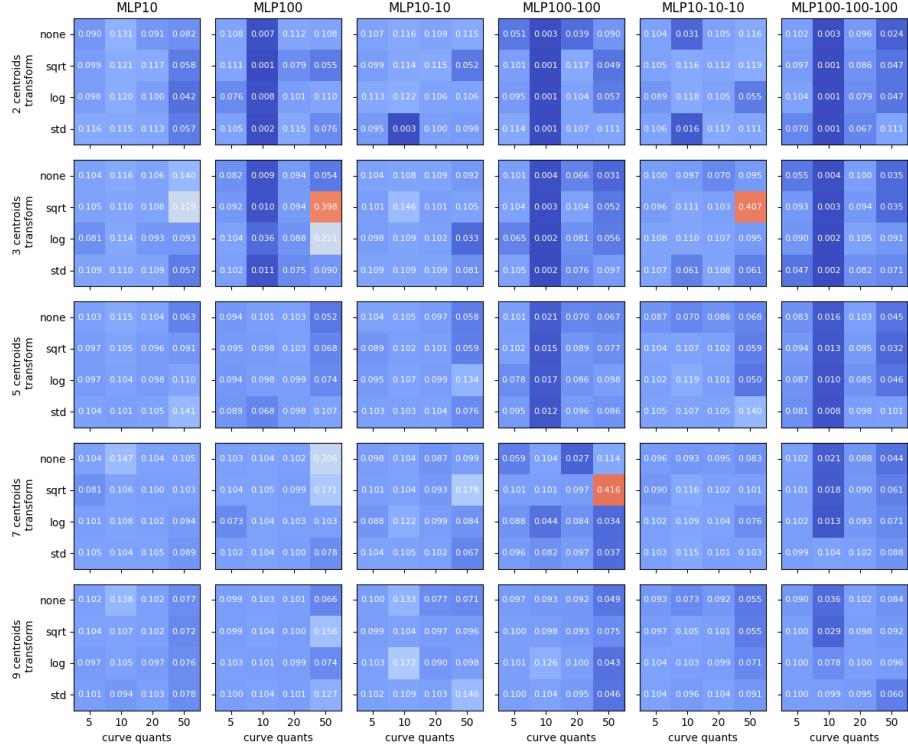


Figure 12: Experiment 3 – Density estimation: MSE for all considered architectures and datasets with dispersion factor = 3

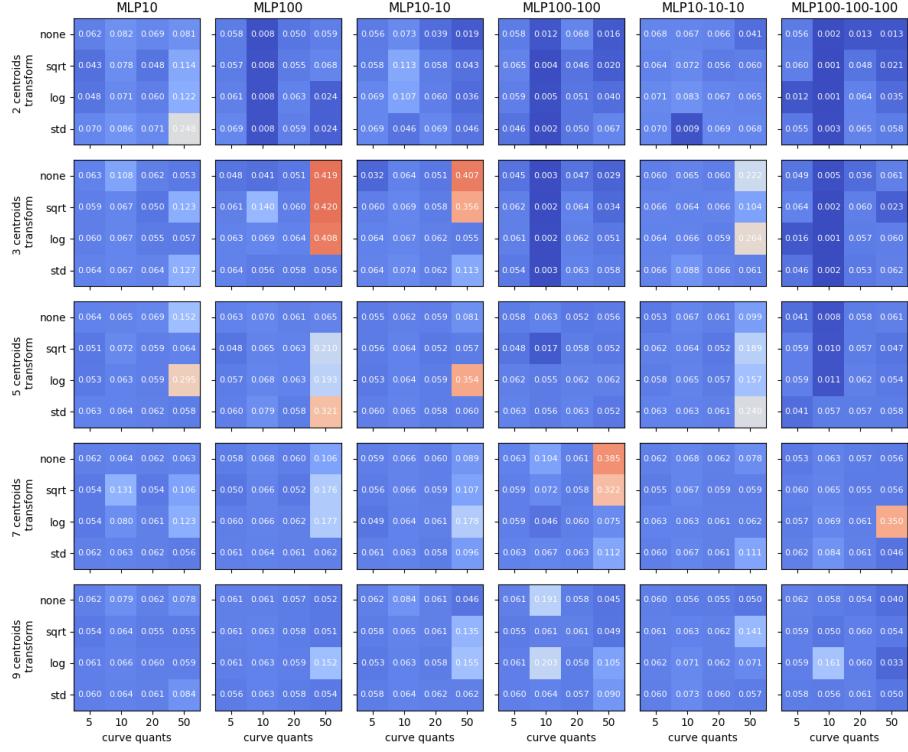


Figure 13: Experiment 3 – Density estimation: MSE for all considered architectures and datasets with dispersion factor = 5

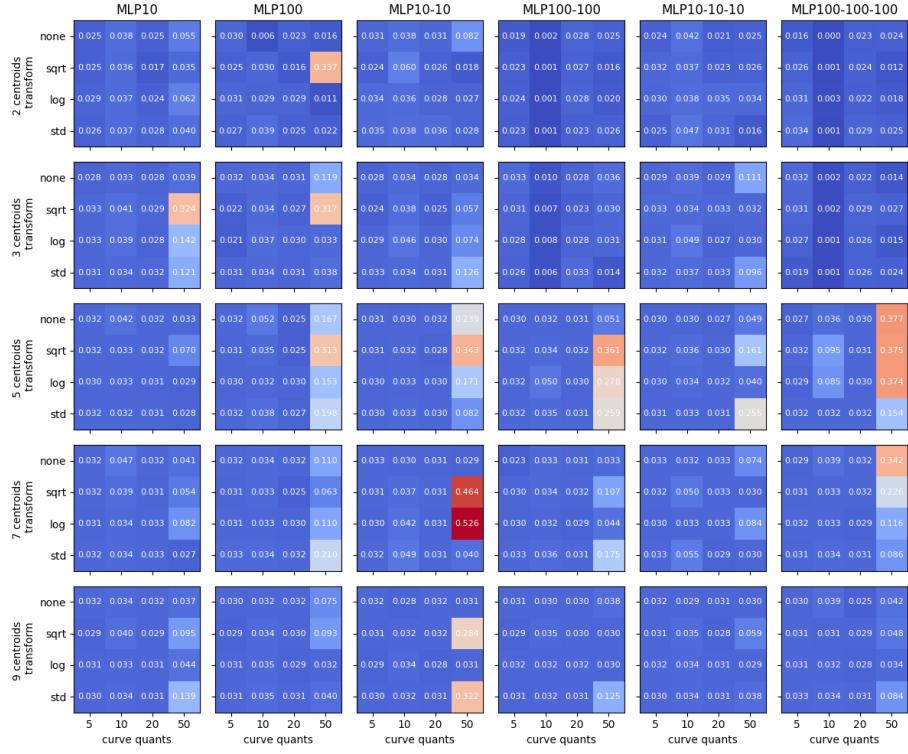


Figure 14: Experiment 3 – Density estimation: MSE for all considered architectures and datasets with dispersion factor = 10

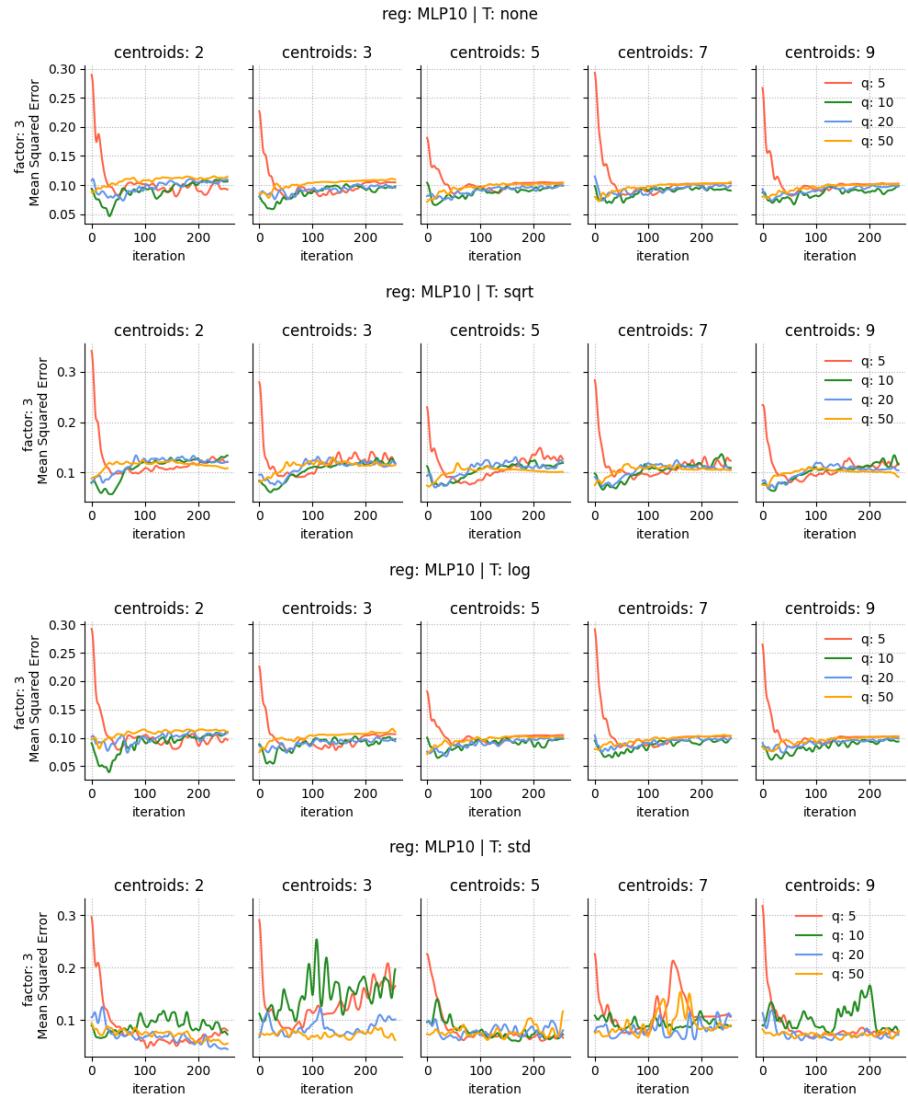


Figure 15: Experiment 3 – Density estimation: Learning process for 4 transformation functions and regressor MLP10

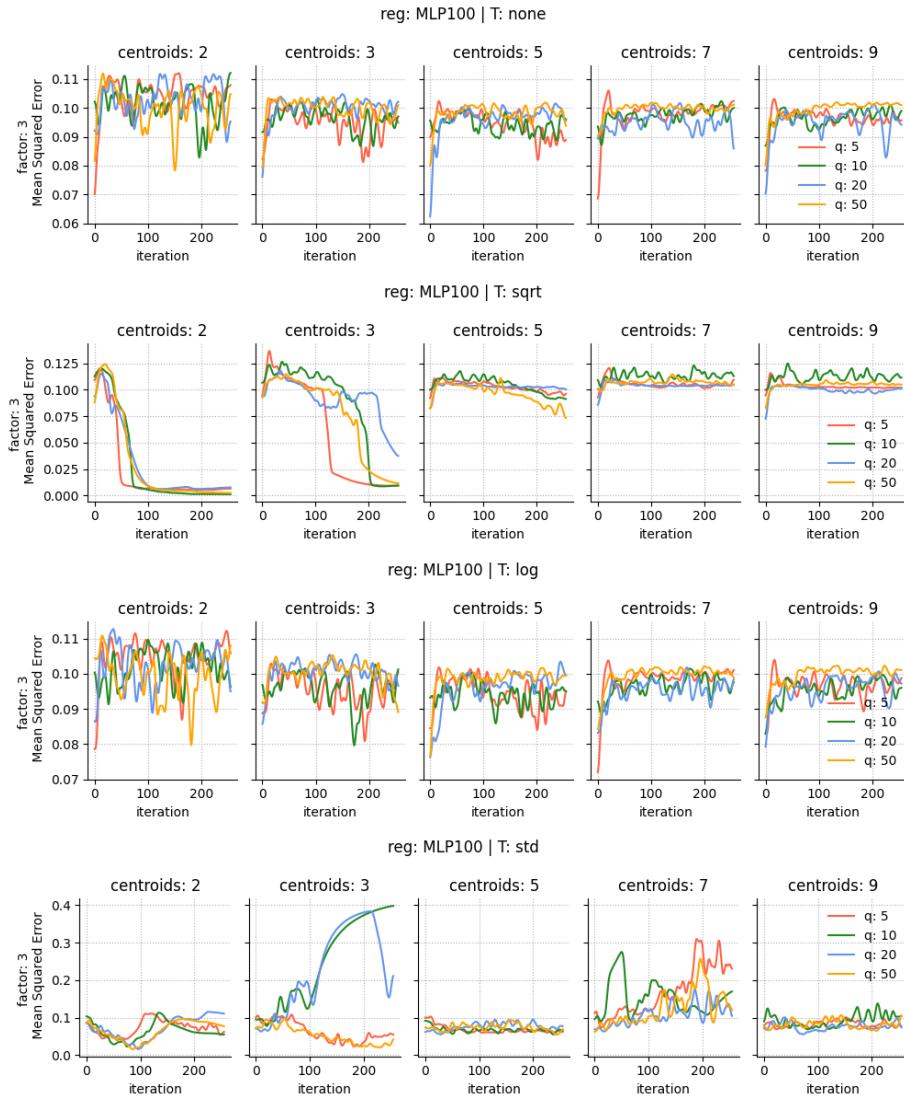


Figure 16: Experiment 3 – Density estimation: Learning process for 4 transformation functions and regressor MLP100

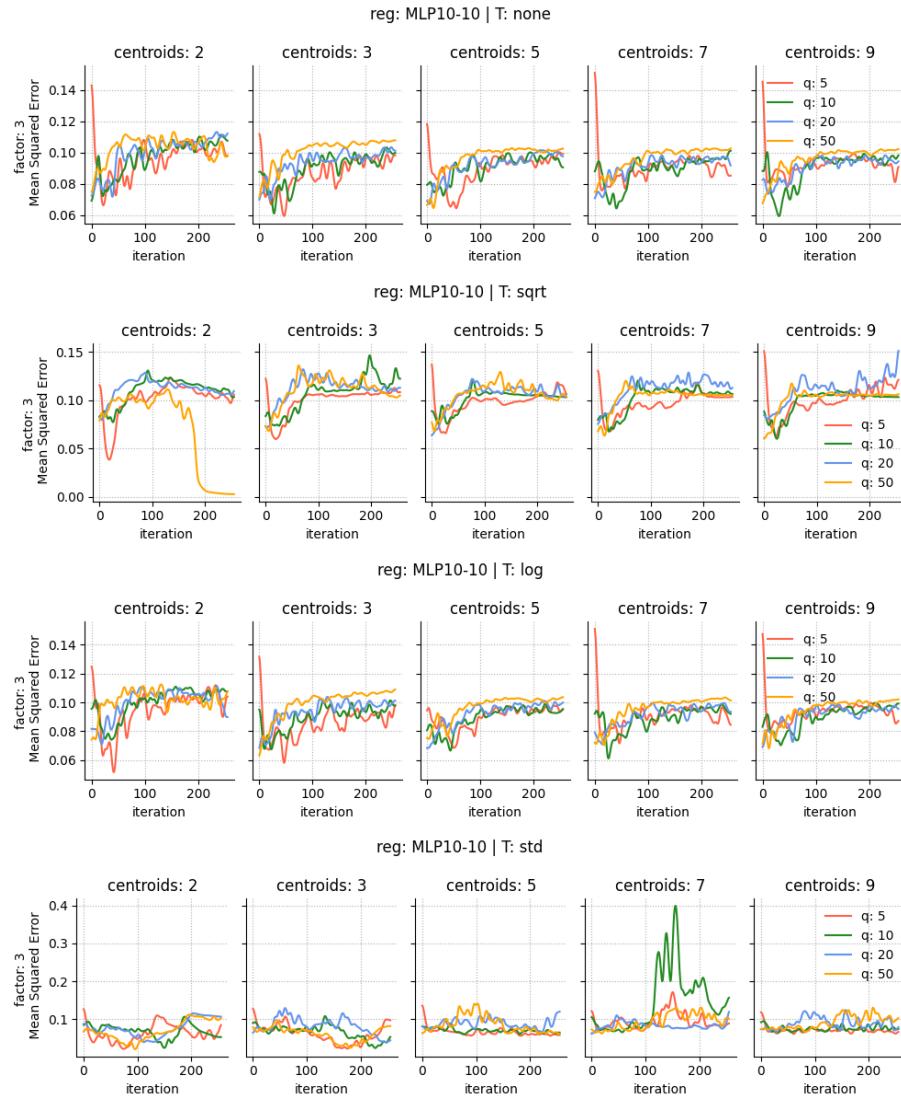


Figure 17: Experiment 3 – Density estimation: Learning process for 4 transformation functions and regressor MLP10-10

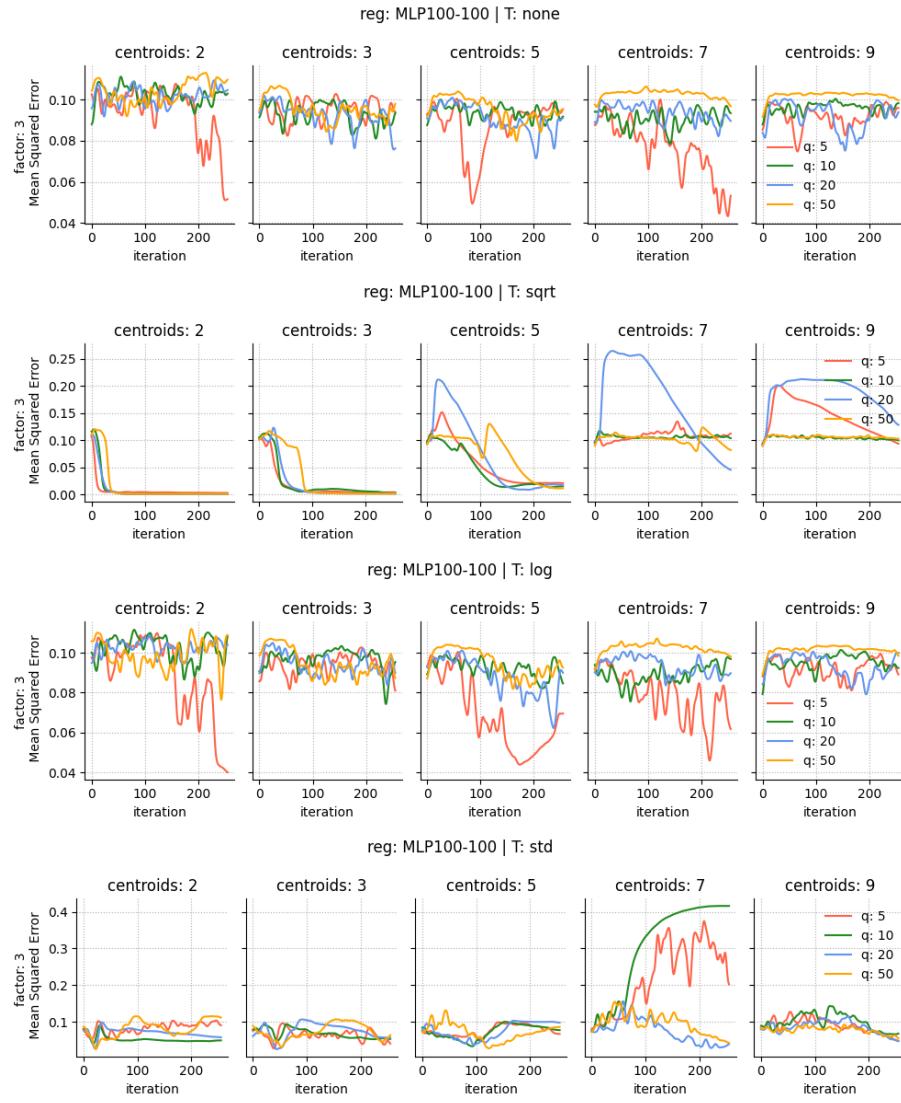


Figure 18: Experiment 3 – Density estimation: Learning process for 4 transformation functions and regressor MLP100-100

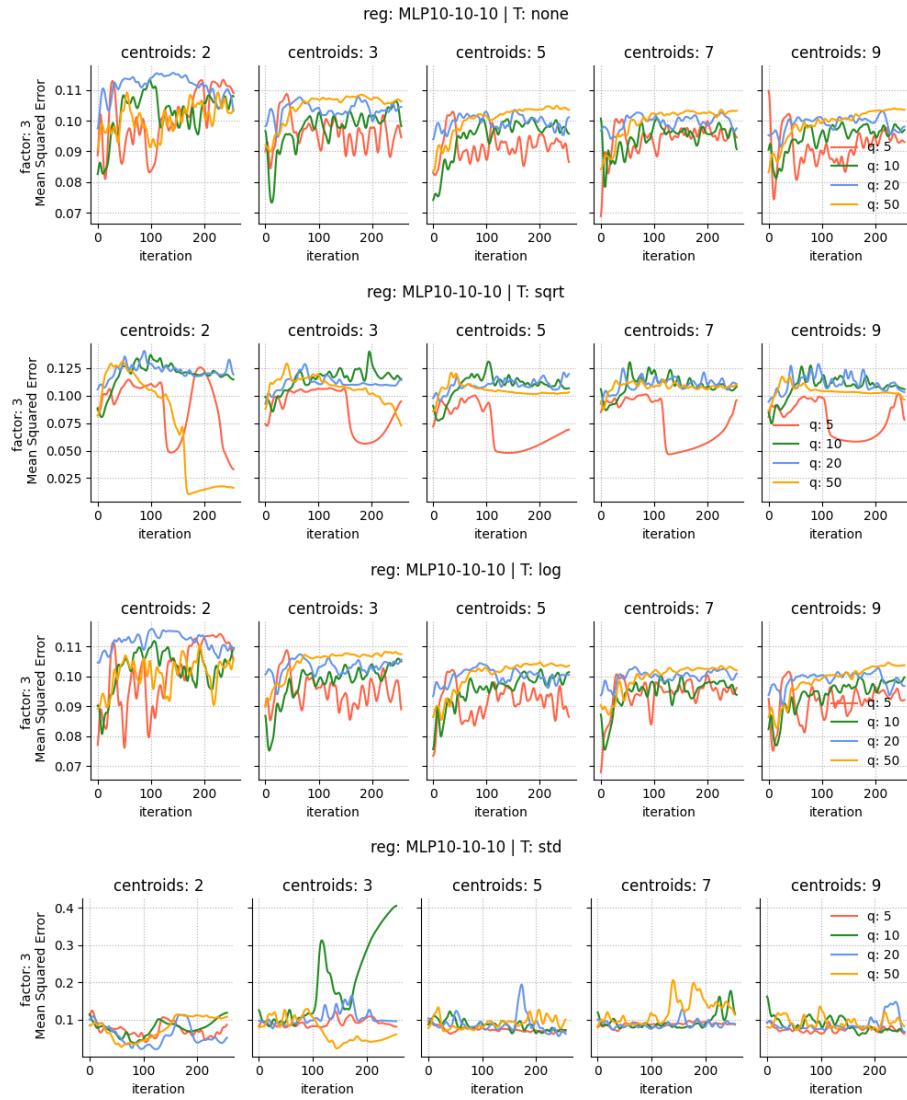


Figure 19: Experiment 3 – Density estimation: Learning process for 4 transformation functions and regressor MLP10-10-10

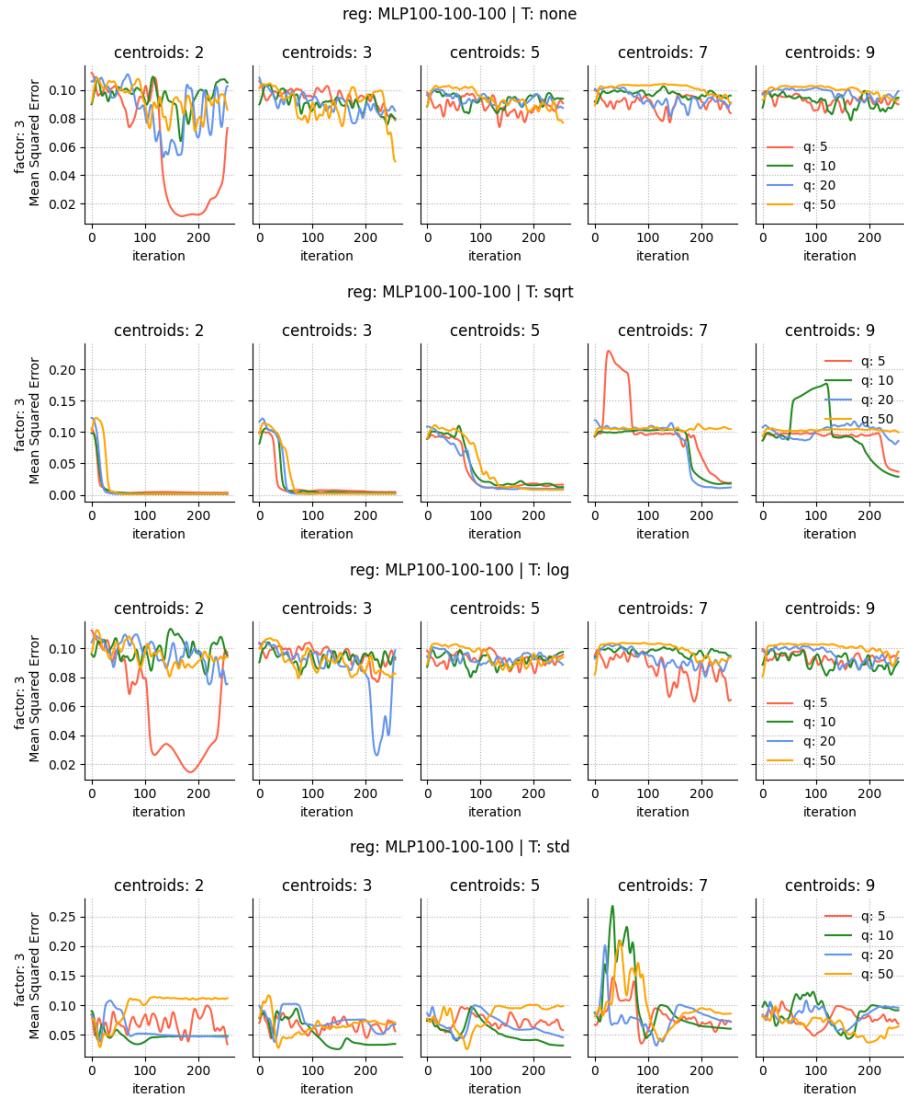


Figure 20: Experiment 3 – Density estimation: Learning process for 4 transformation functions and regressor MLP100-100-100