

Models trained using 3000 samples and 30 epochs

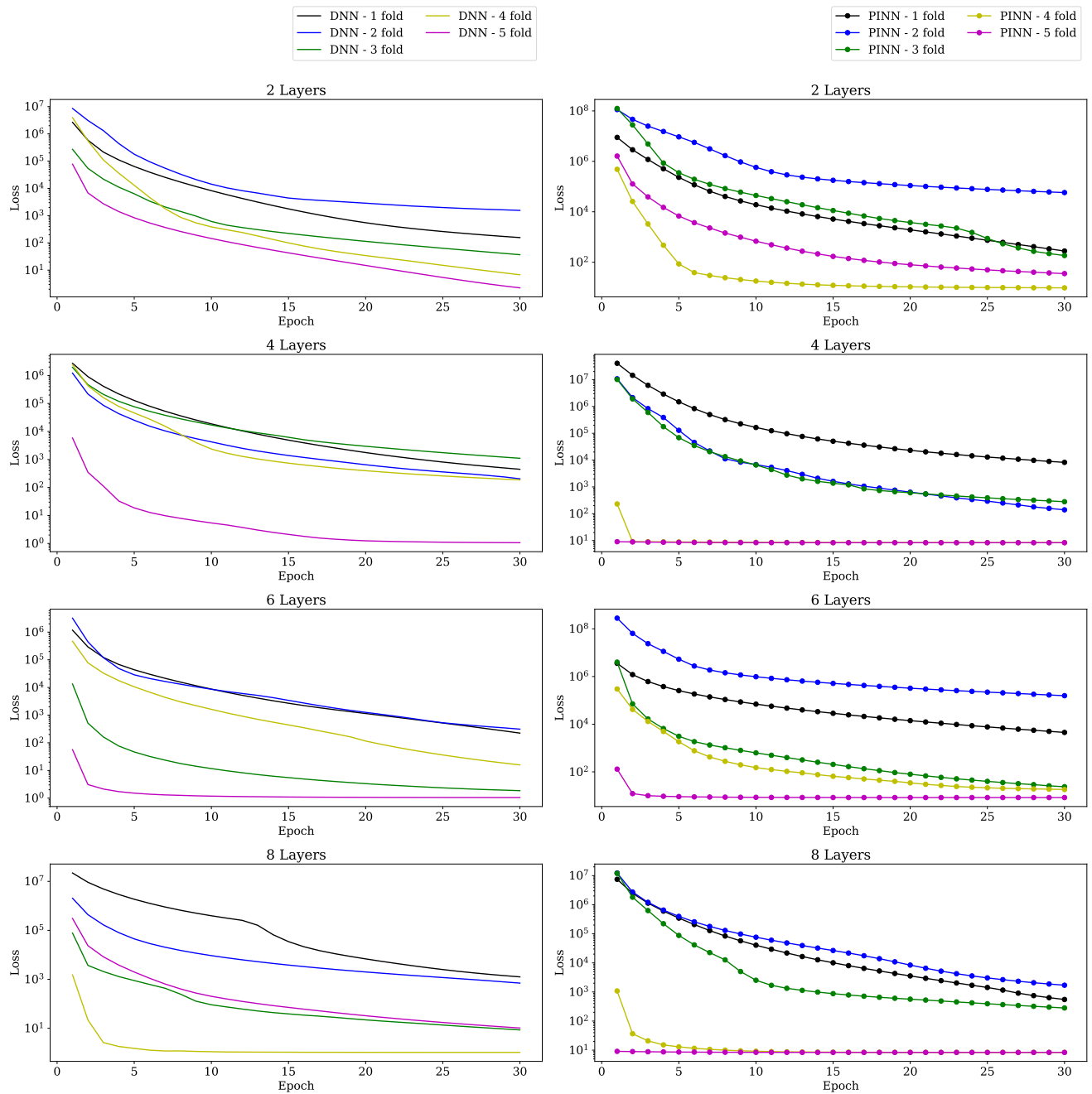


Figure 1. Training loss for DNN and PINN models in 5-Fold Cross-validation using 3000 samples and 30 epochs

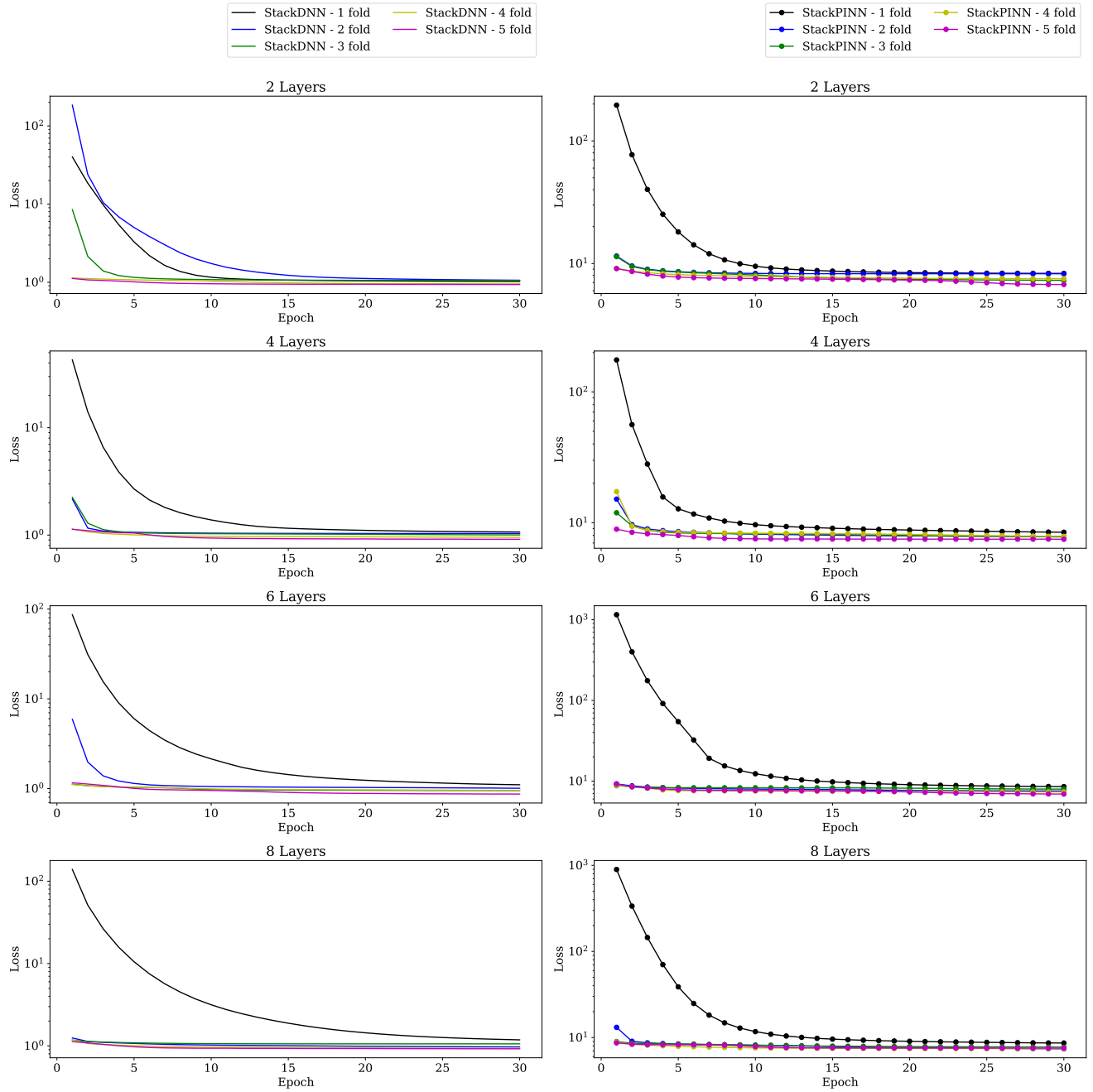


Figure 2. Training loss for StackDNN and StackPINN models in 5-Fold Cross-validation using 3000 samples and 30 epochs

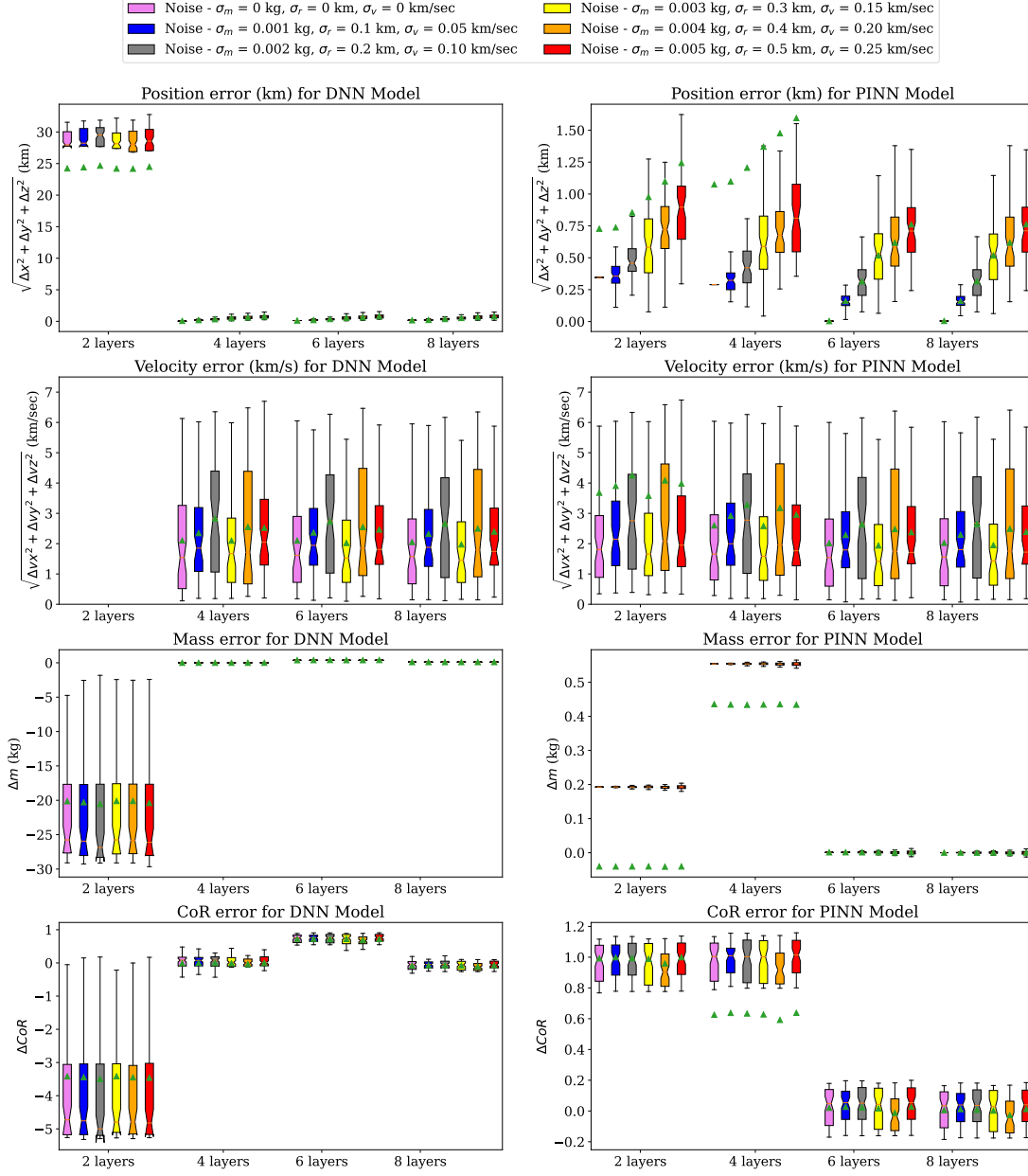


Figure 3. Error comparison of DNN and PINN models trained using 3000 samples and 30 epochs for multiple noise variations in LEMUR Satellites inelastic collision data

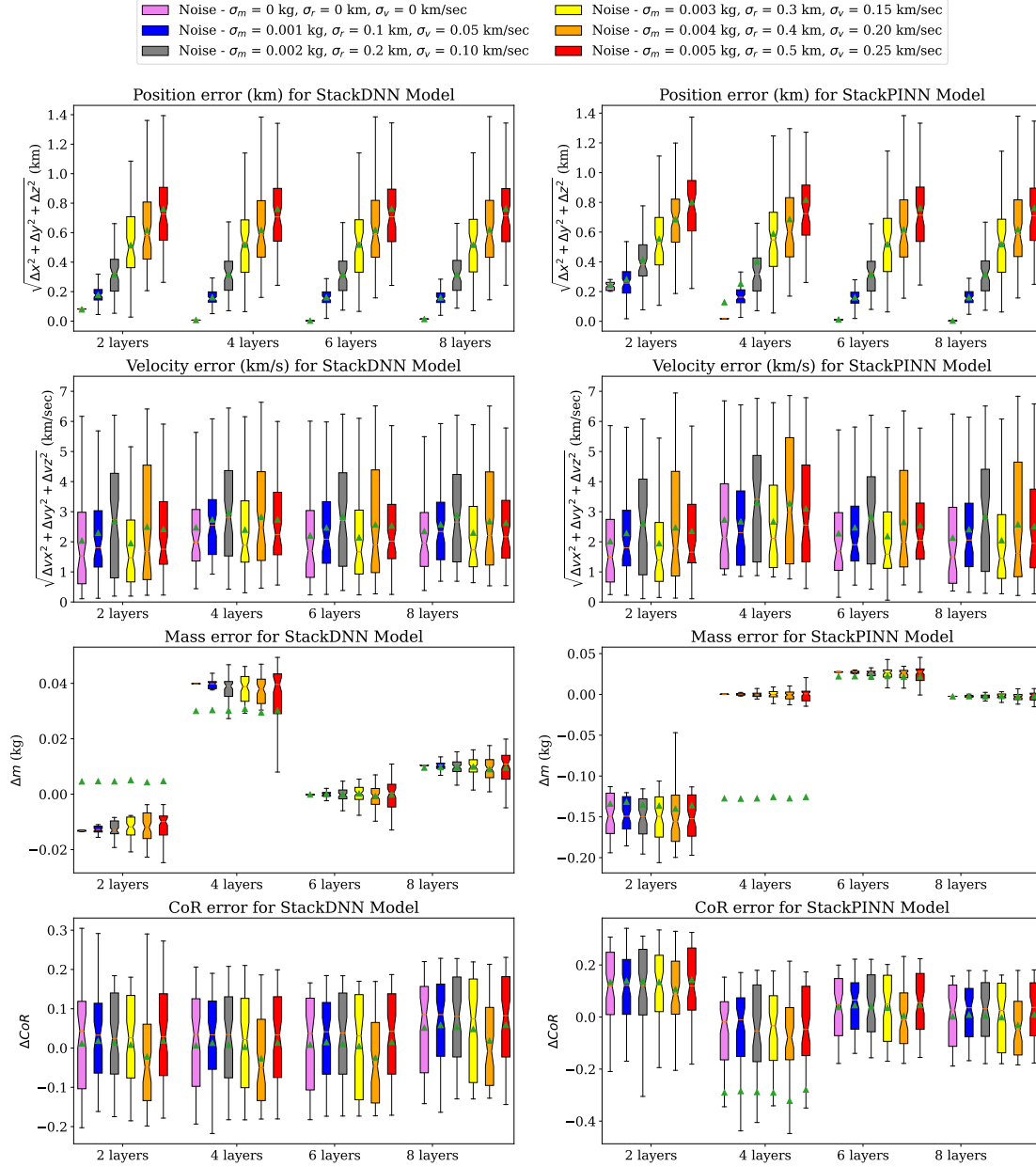


Figure 4. Error comparison of StackDNN and StackPINN models trained using 3000 samples and 30 epochs for multiple noise variations in LEMUR satellites inelastic collision data

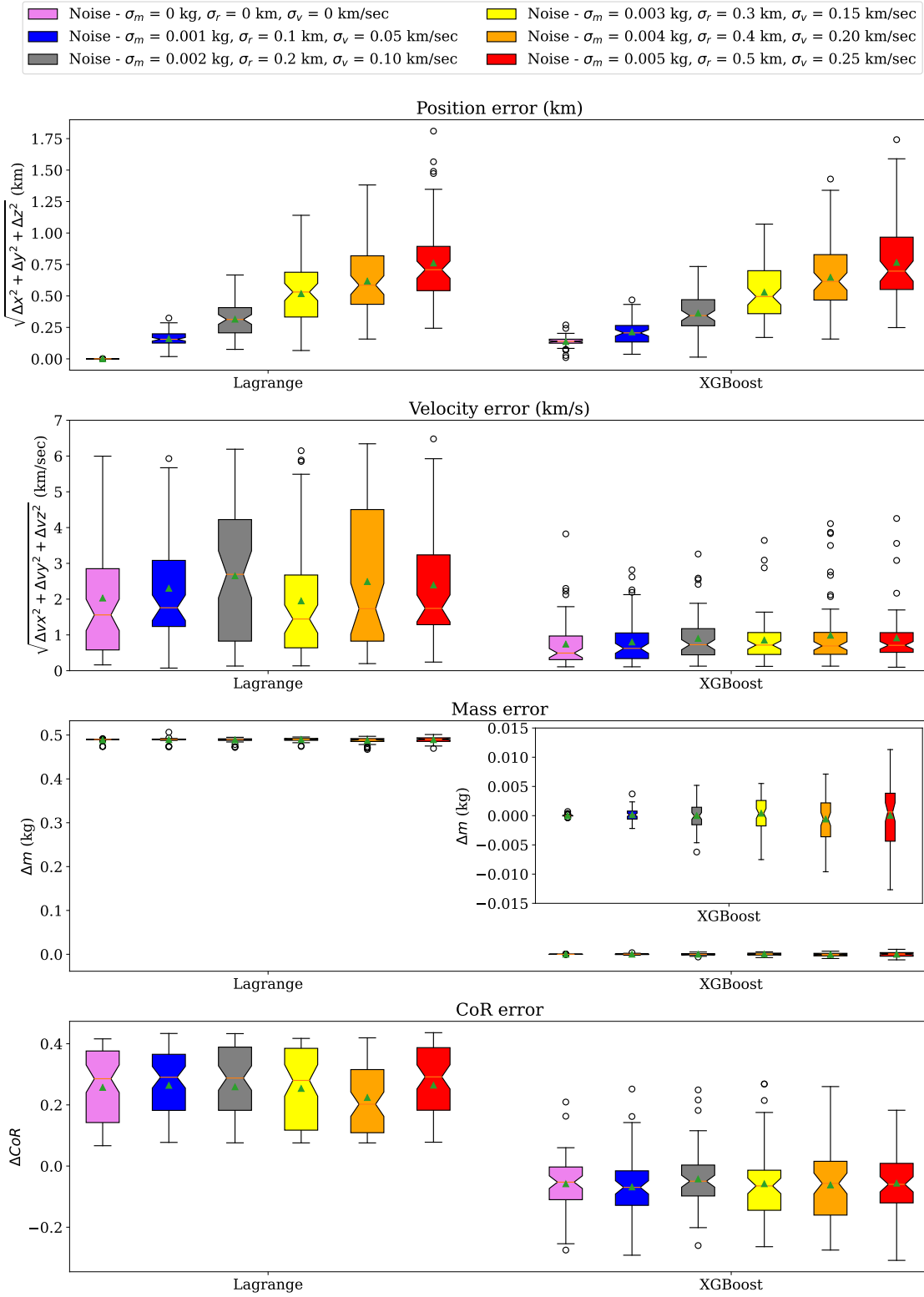


Figure 5. Error comparison of Lagrange and XGBoost models trained using 3000 samples for multiple noise variations in LEMUR satellites inelastic collision data

Models trained using 3000 samples and 50 epochs

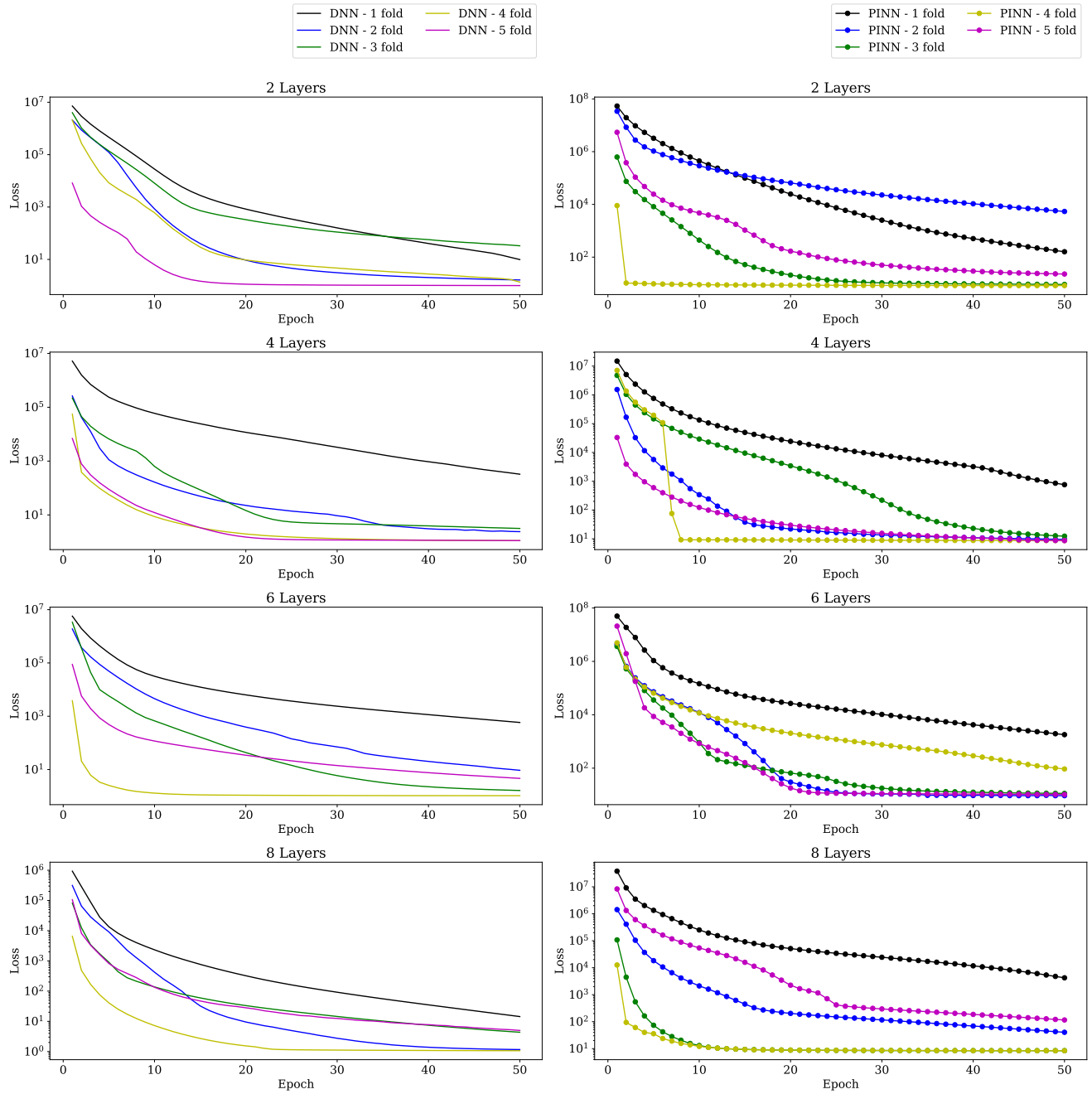


Figure 6. Training loss for DNN and PINN models in 5-Fold Cross-validation using 3000 samples and 50 epochs

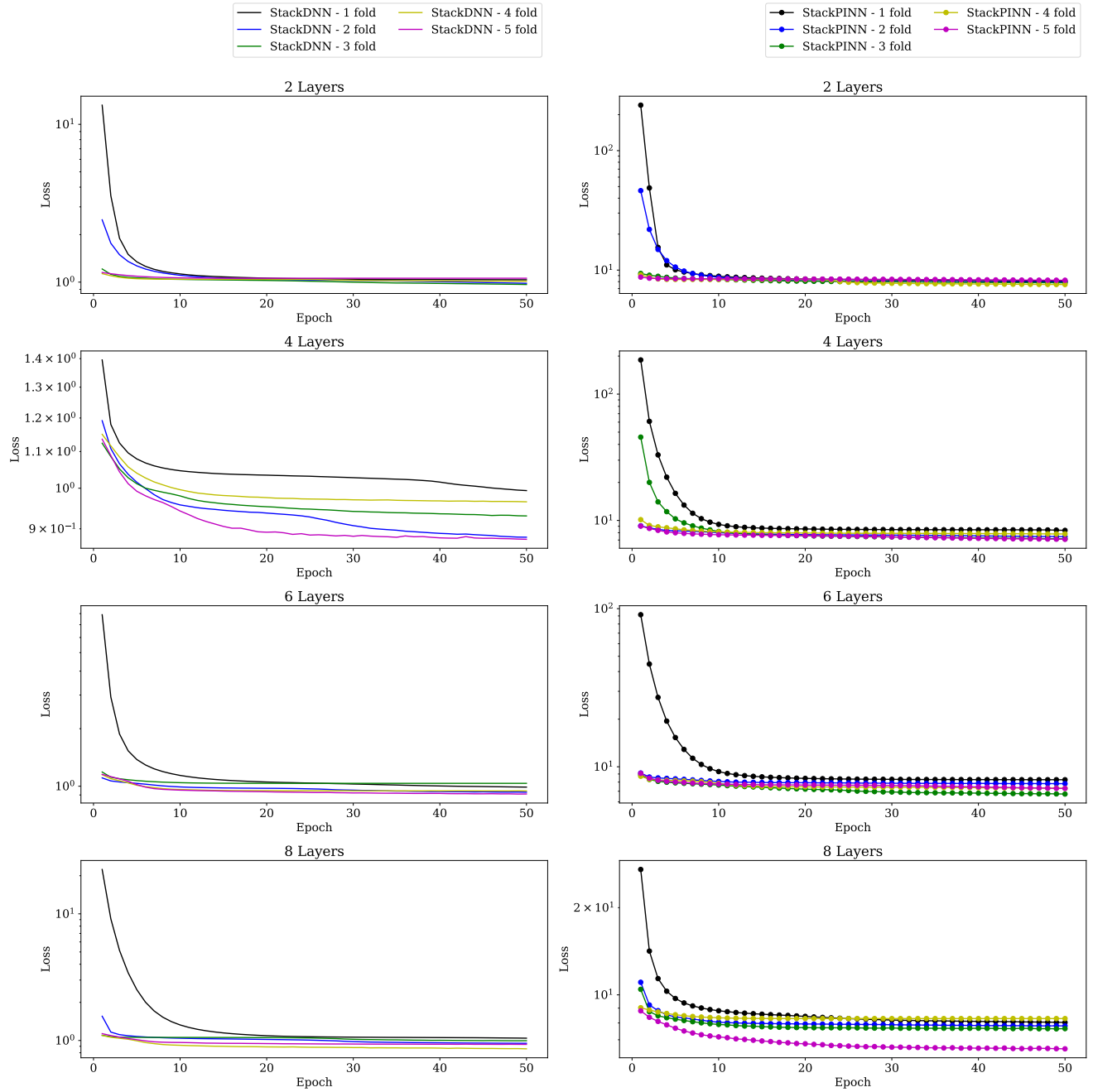


Figure 7. Training loss for StackDNN and StackPINN models in 5-Fold Cross-validation using 3000 samples and 50 epochs

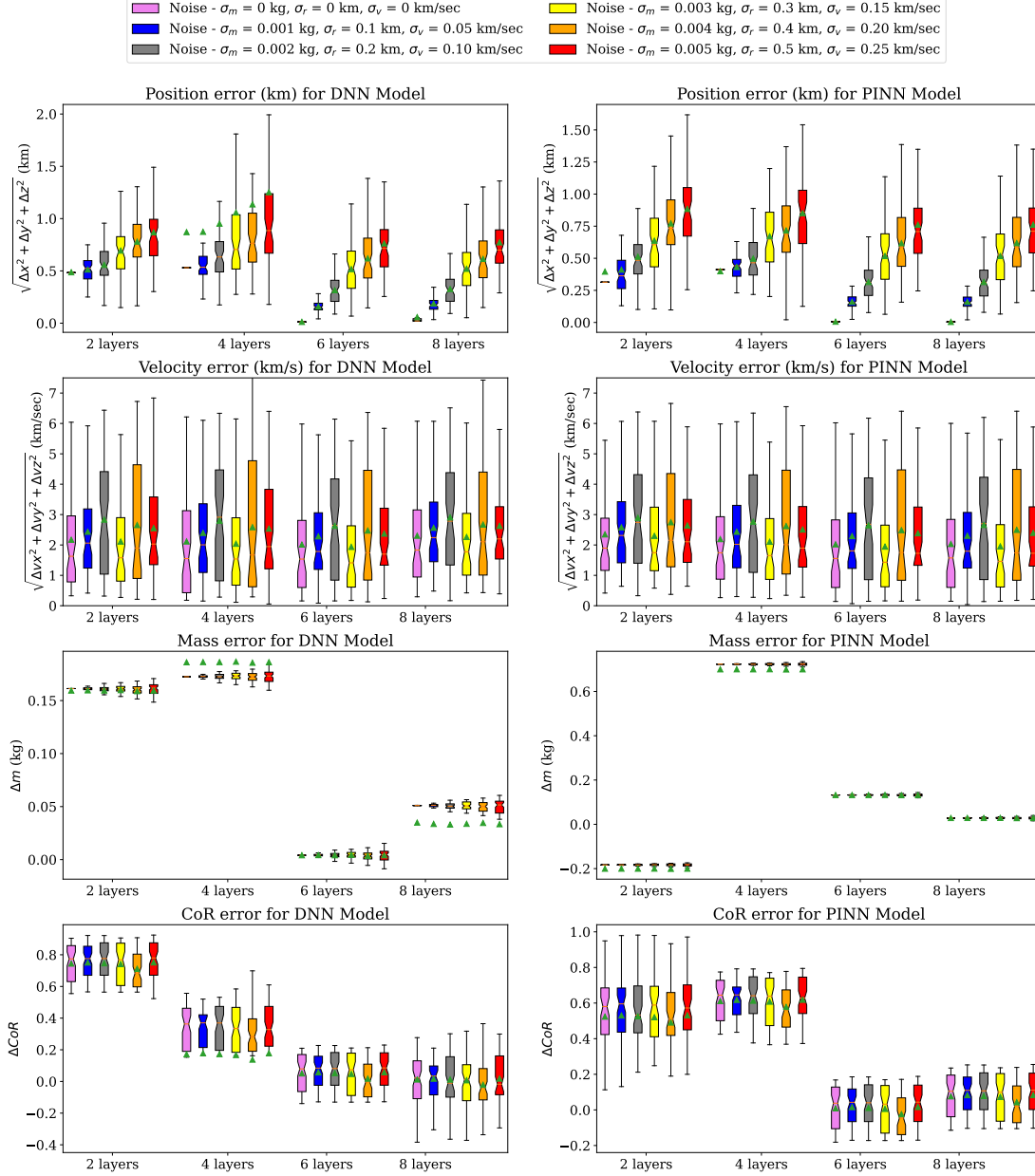


Figure 8. Error comparison of DNN and PINN models trained using 3000 samples and 50 epochs for multiple noise variations in LEMUR Satellites inelastic collision data

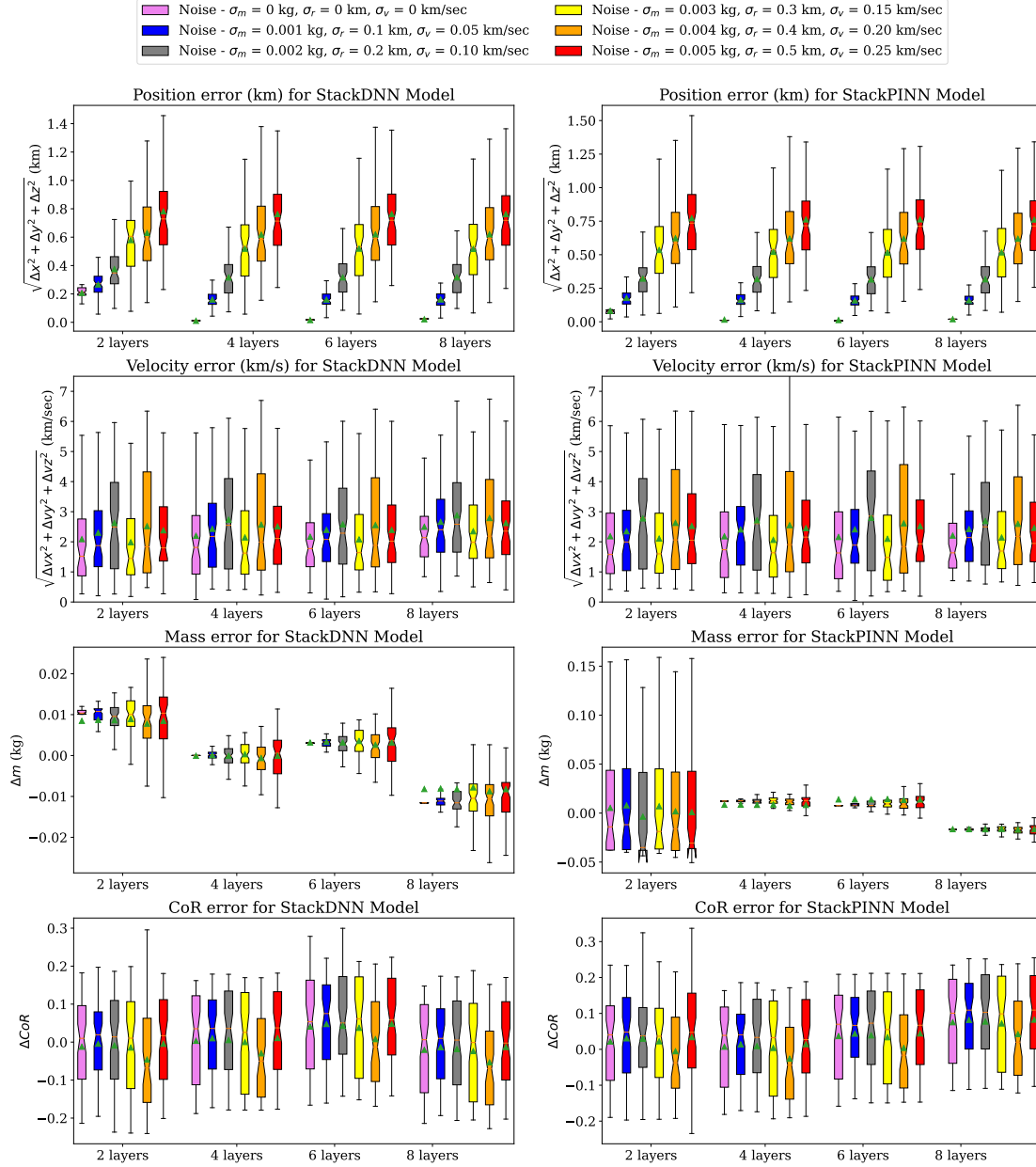


Figure 9. Error comparison of StackDNN and StackPINN models trained using 3000 samples and 50 epochs for multiple noise variations in LEMUR satellites inelastic collision data

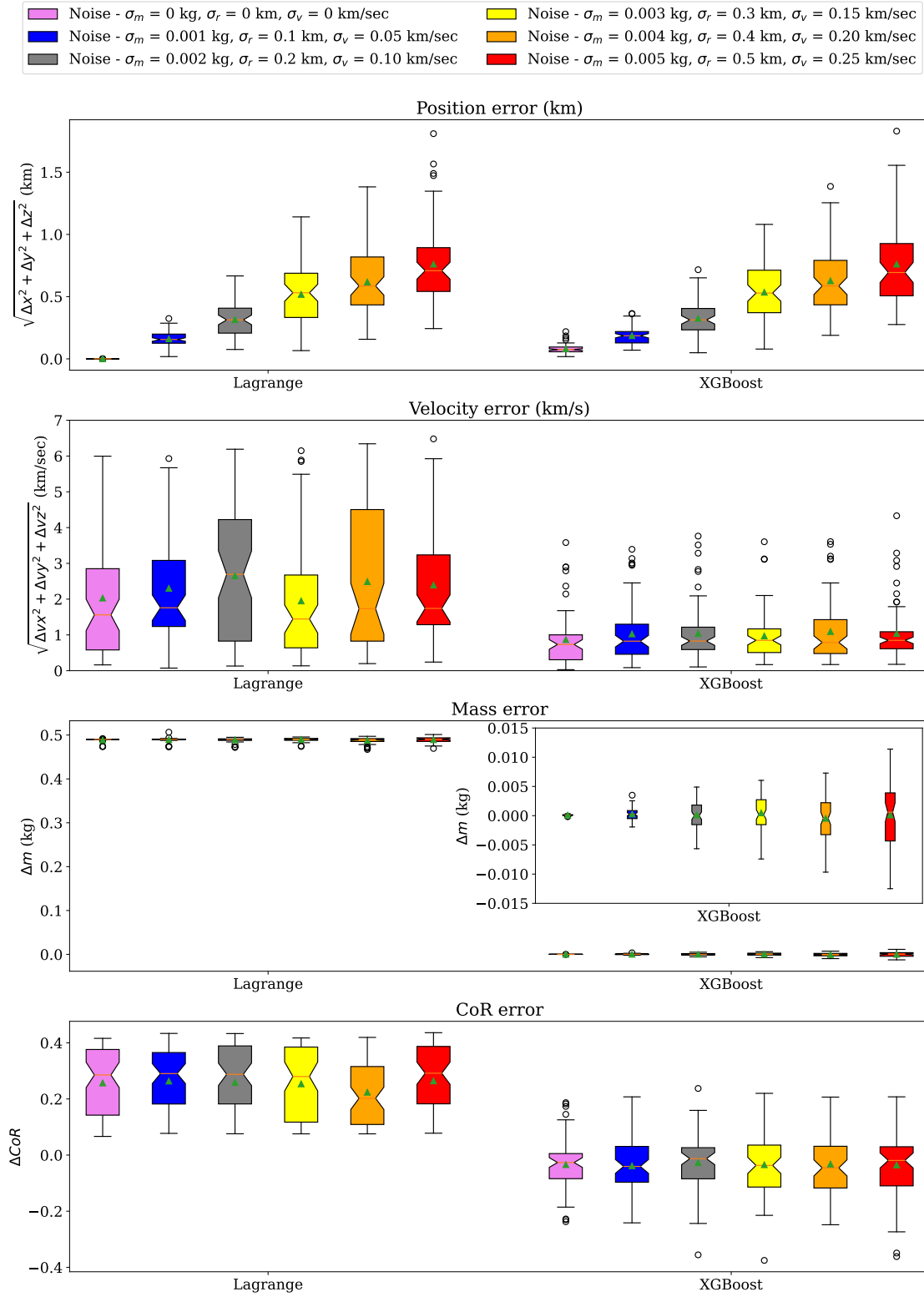


Figure 10. Error comparison of Lagrange and XGBoost models trained using 3000 samples for multiple noise variations in LEMUR satellites inelastic collision data

Models trained using 4000 samples and 30 epochs

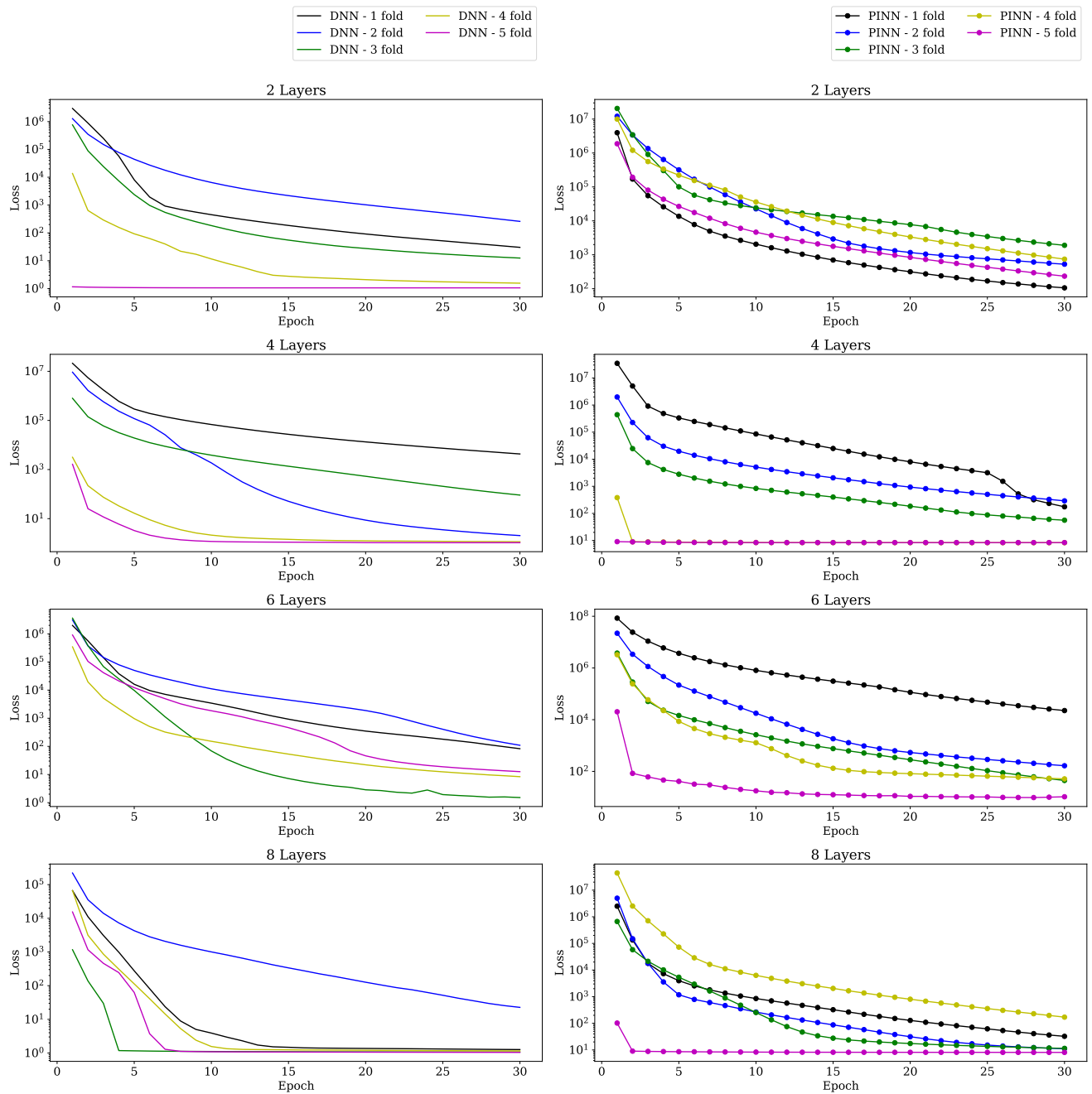


Figure 11. Training loss for DNN and PINN models in 5-Fold Cross-validation using 4000 samples and 30 epochs

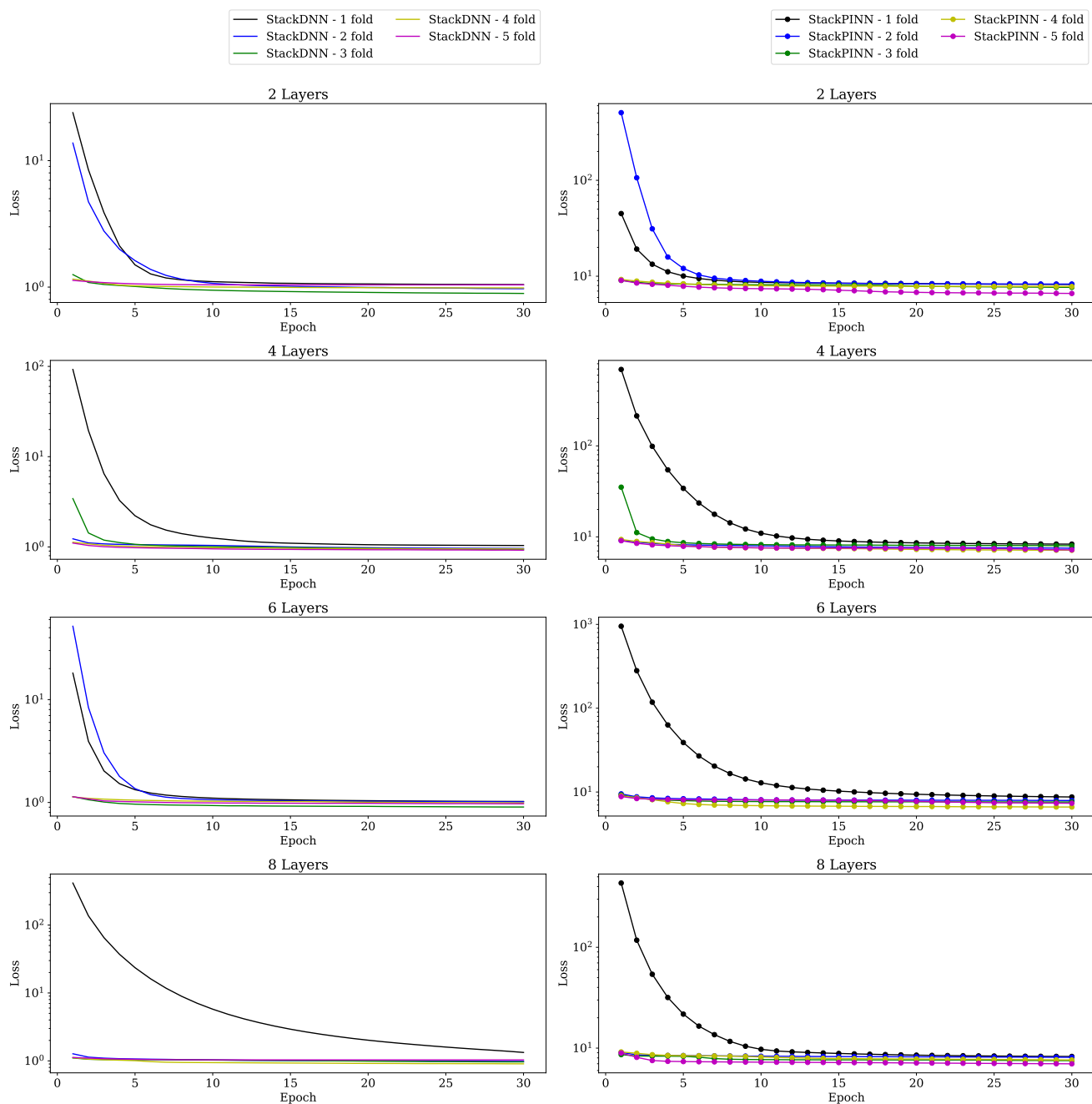


Figure 12. Training loss for StackDNN and StackPINN models in 5-Fold Cross-validation using 4000 samples and 30 epochs

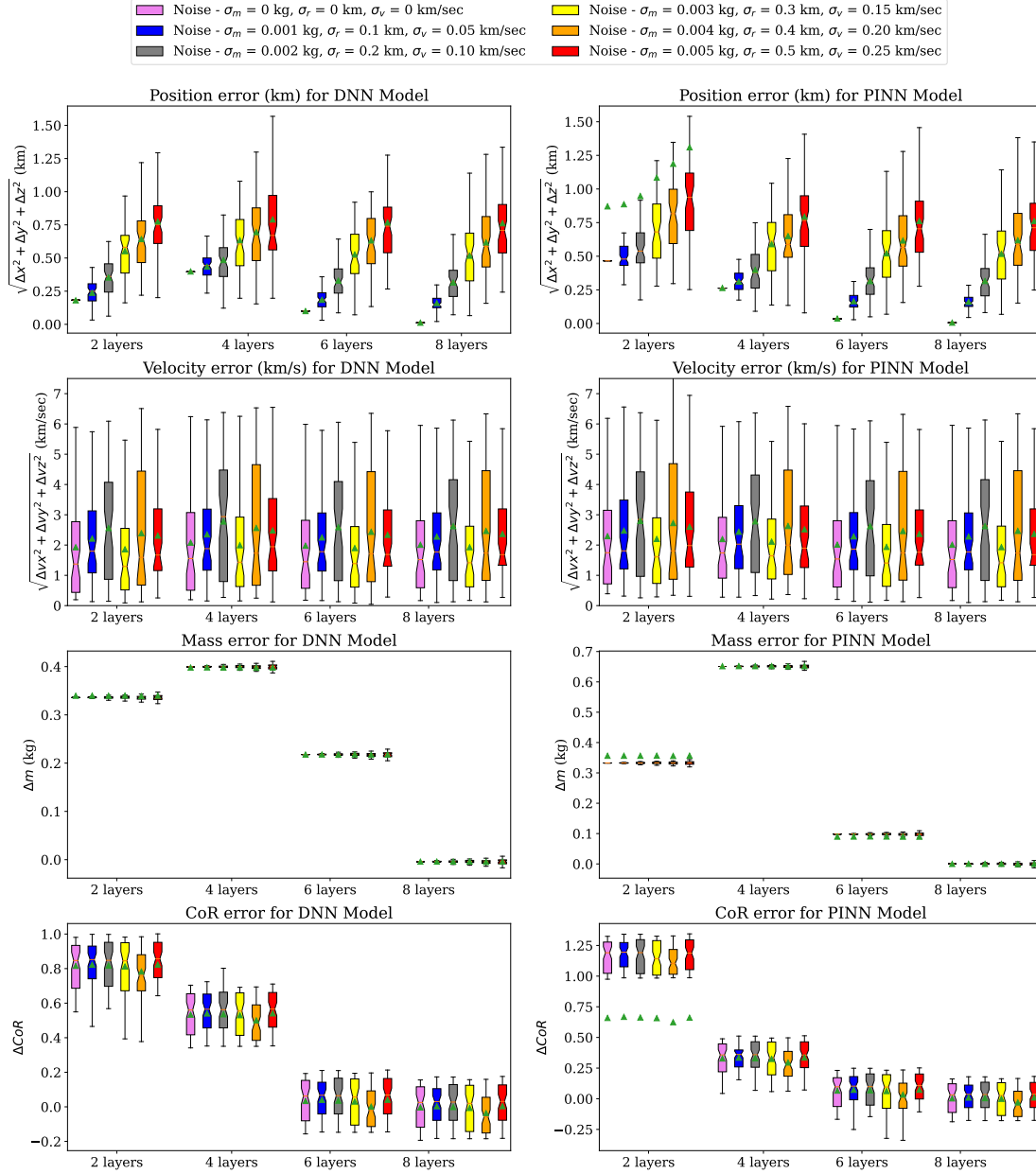


Figure 13. Error comparison of DNN and PINN models trained using 4000 samples and 30 epochs for multiple noise variations in LEMUR Satellites inelastic collision data

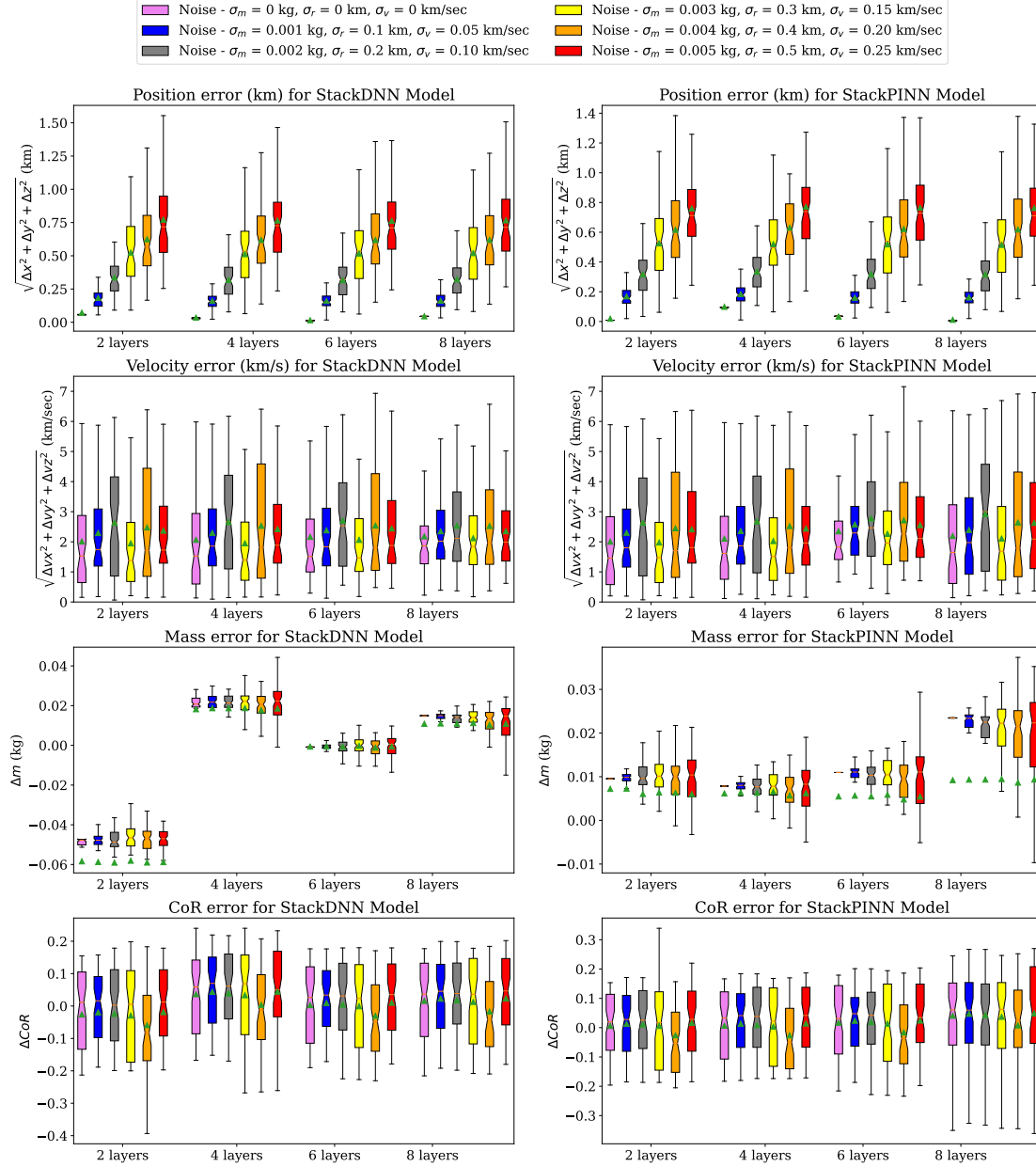


Figure 14. Error comparison of StackDNN and StackPINN models trained using 4000 samples and 30 epochs for multiple noise variations in LEMUR satellites inelastic collision data

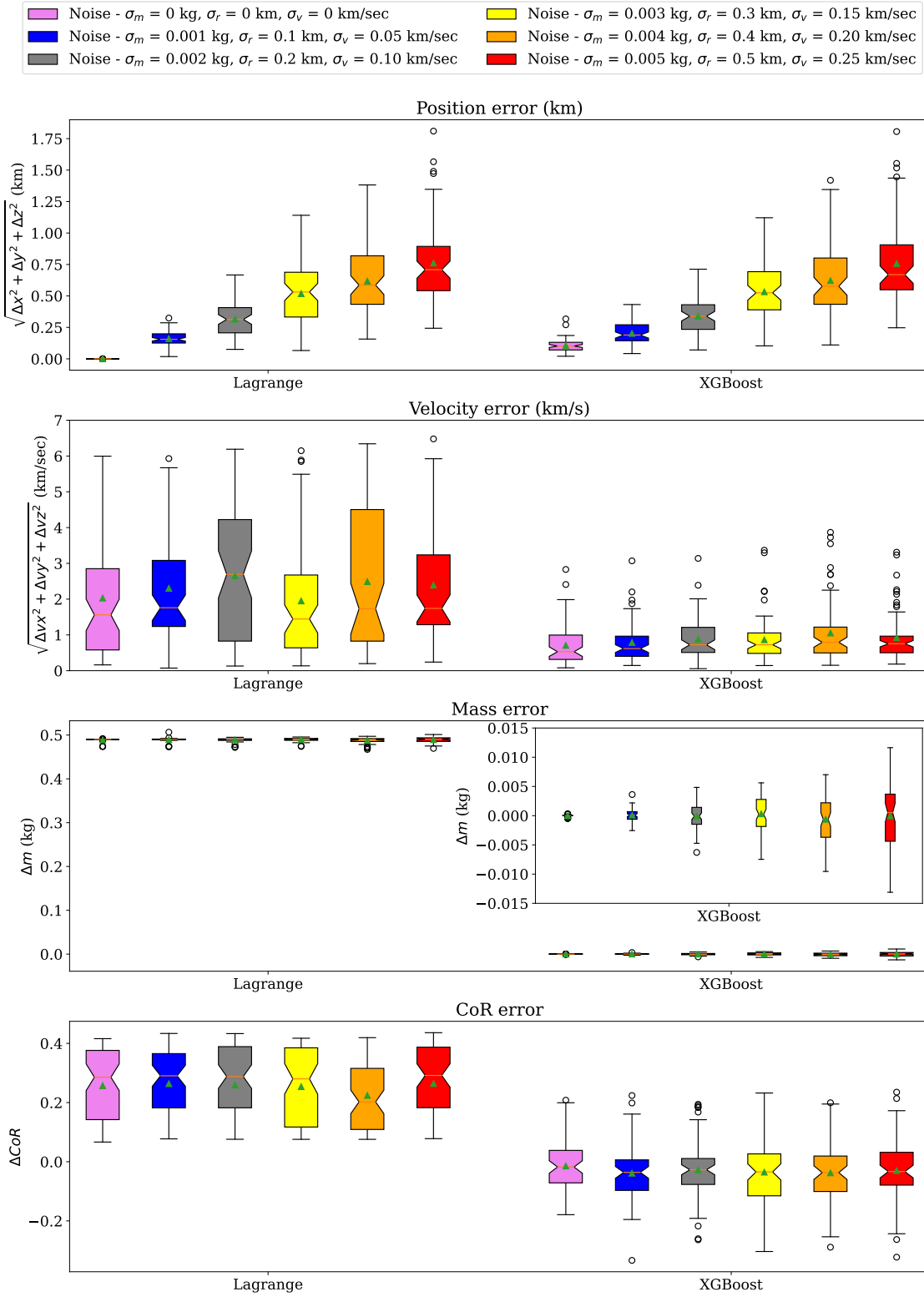


Figure 15. Error comparison of Lagrange and XGBoost models trained using 4000 samples for multiple noise variations in LEMUR satellites inelastic collision data

Models trained using 4000 samples and 50 epochs

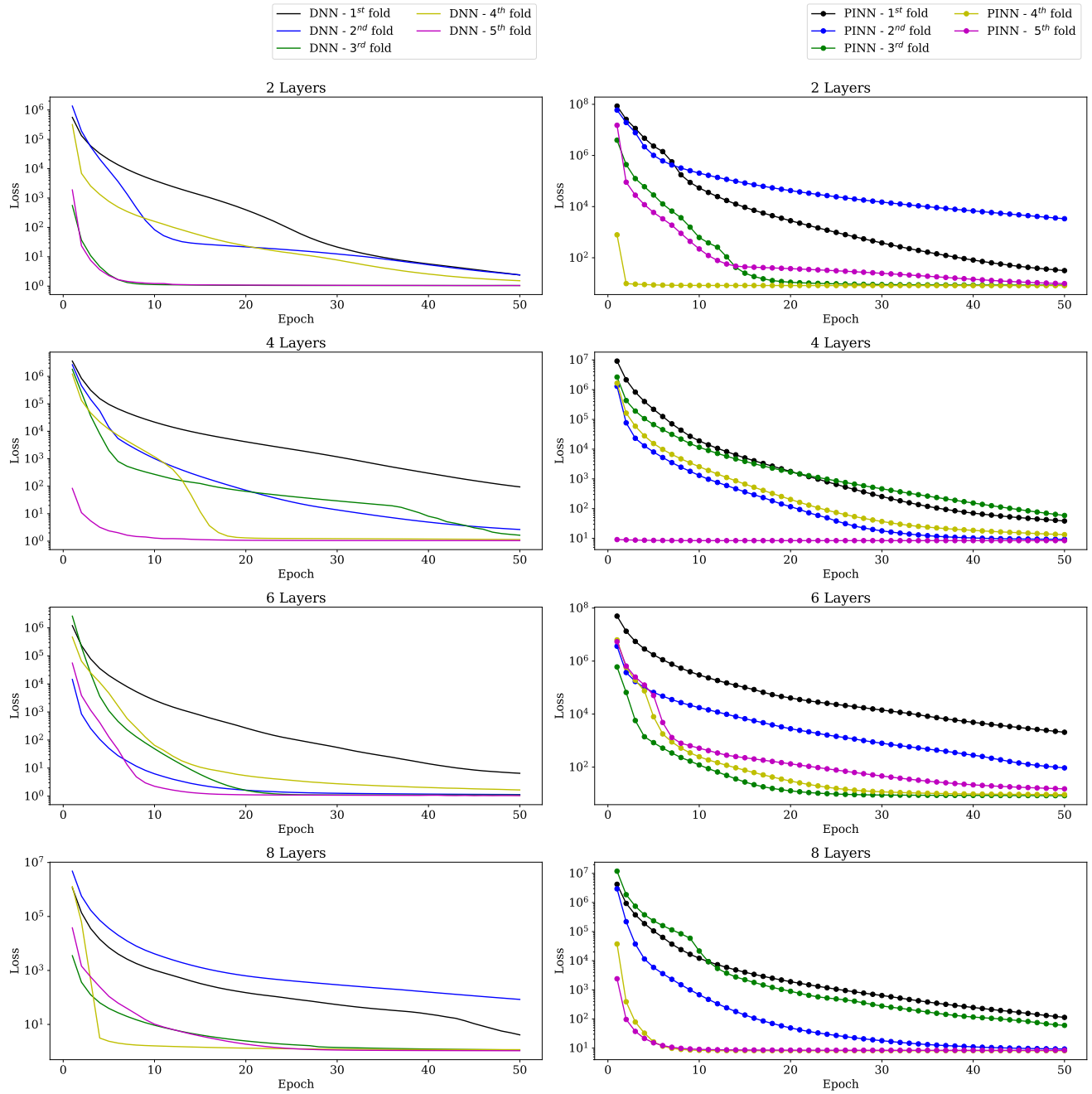


Figure 16. Training loss for DNN and PINN models in 5-Fold Cross-validation using 4000 samples and 50 epochs

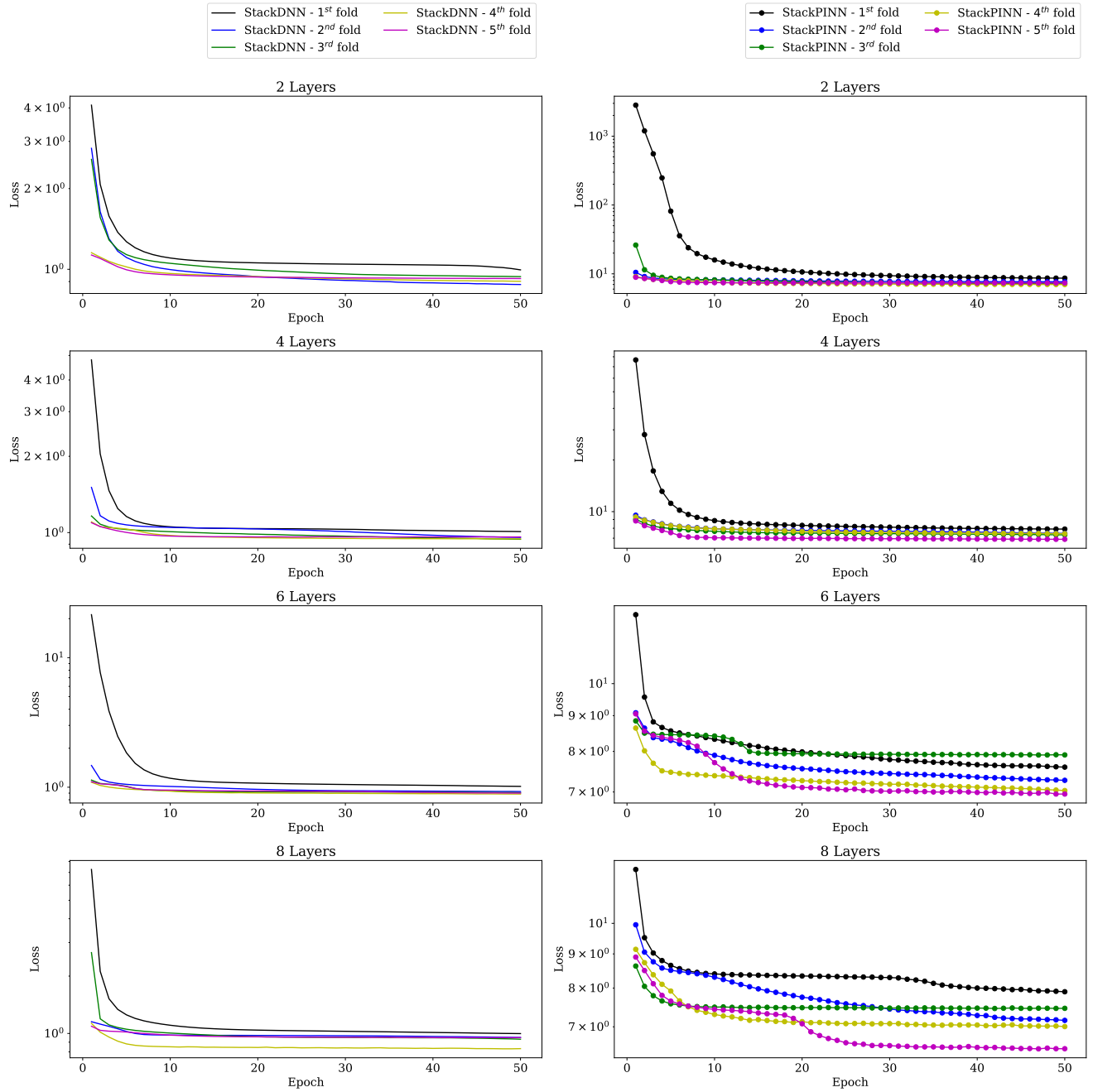


Figure 17. Training loss for StackDNN and StackPINN models in 5-Fold Cross-validation using 4000 samples and 50 epochs

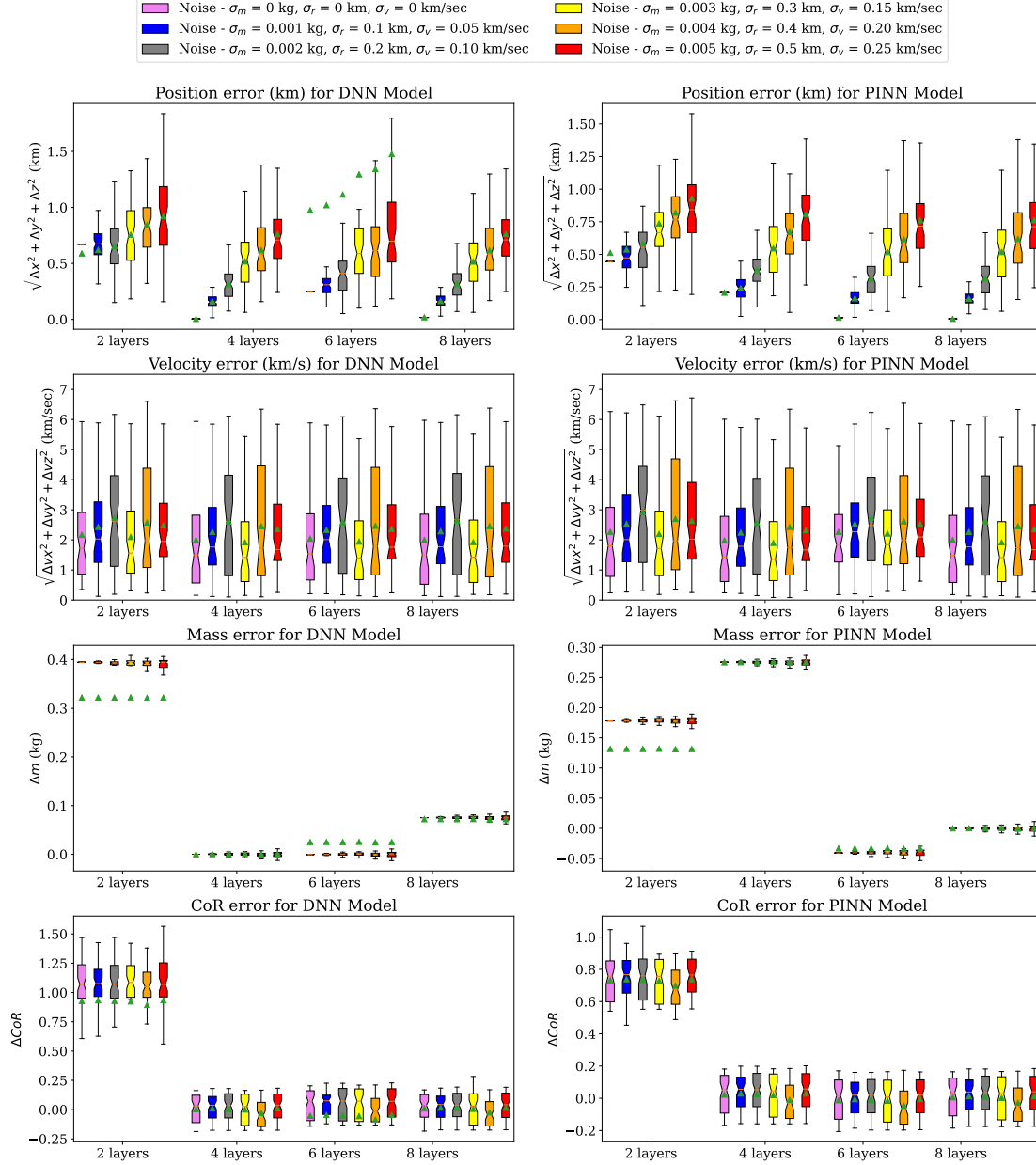


Figure 18. Error comparison of DNN and PINN models trained using 4000 samples and 50 epochs for multiple noise variations in LEMUR Satellites inelastic collision data

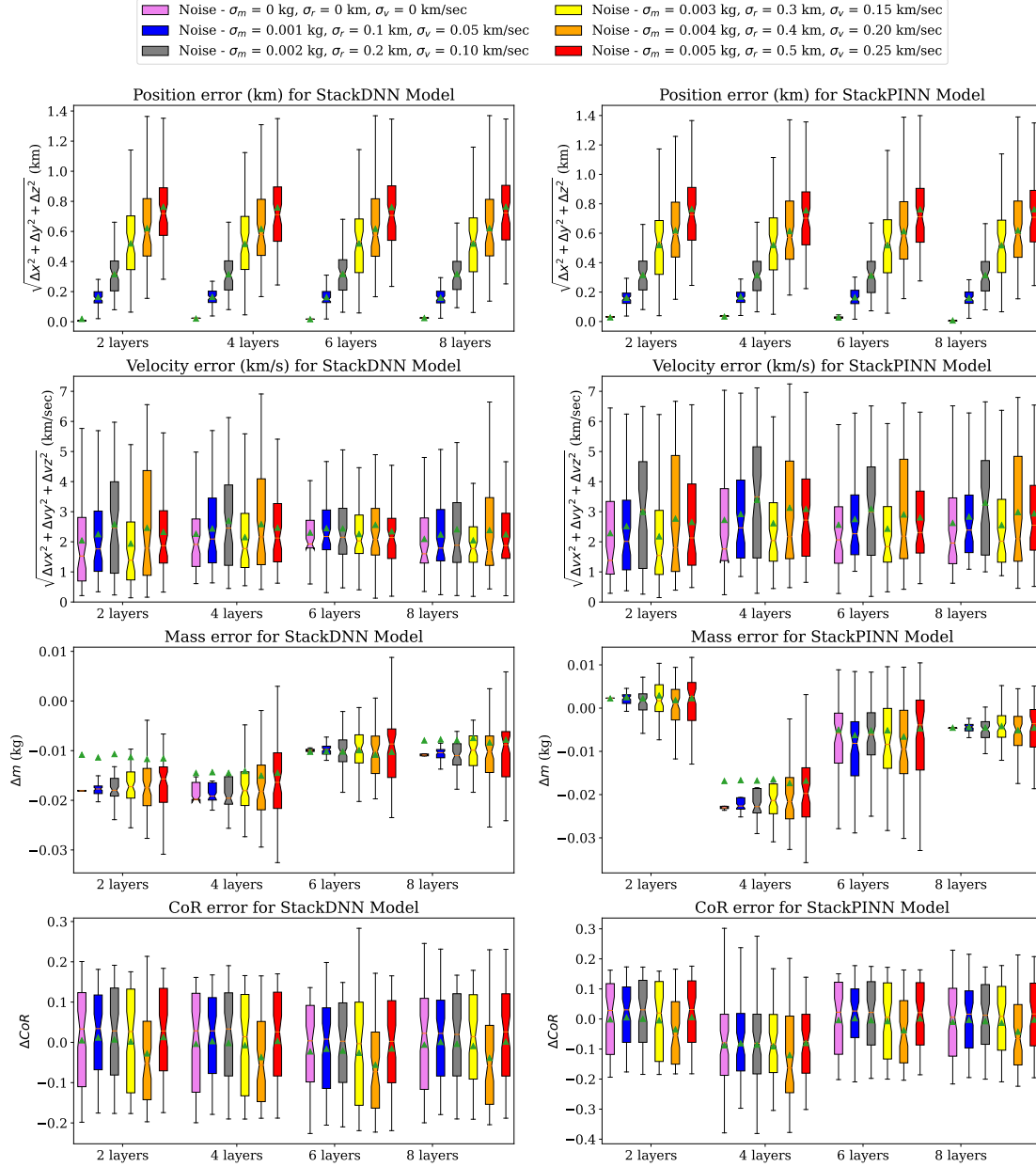


Figure 19. Error comparison of StackDNN and StackPINN models trained using 4000 samples and 50 epochs for multiple noise variations in LEMUR satellites inelastic collision data

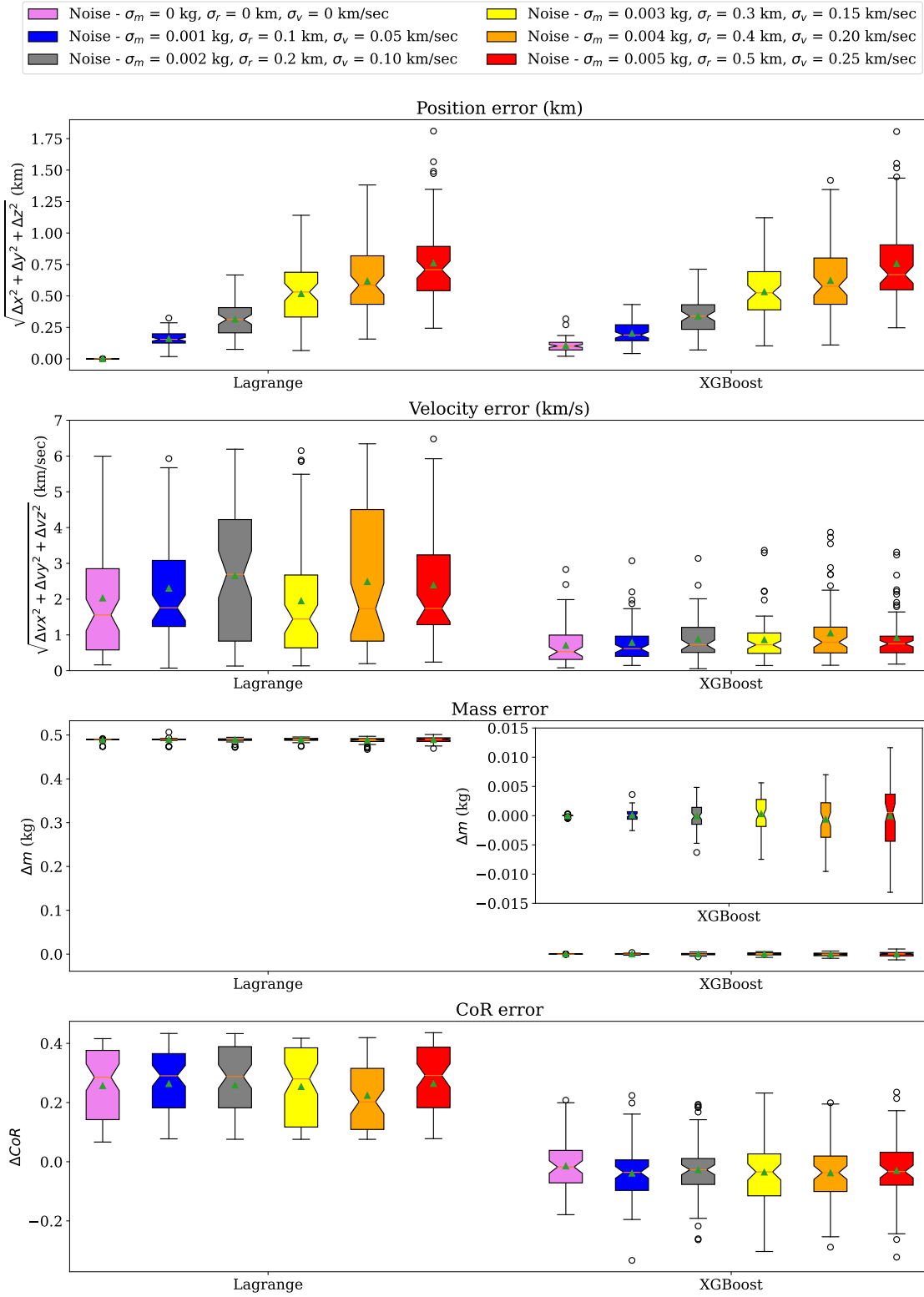


Figure 20. Error comparison of Lagrange and XGBoost models trained using 4000 samples for multiple noise variations in LEMUR satellites inelastic collision data

Models trained using 8235 samples and 30 epochs

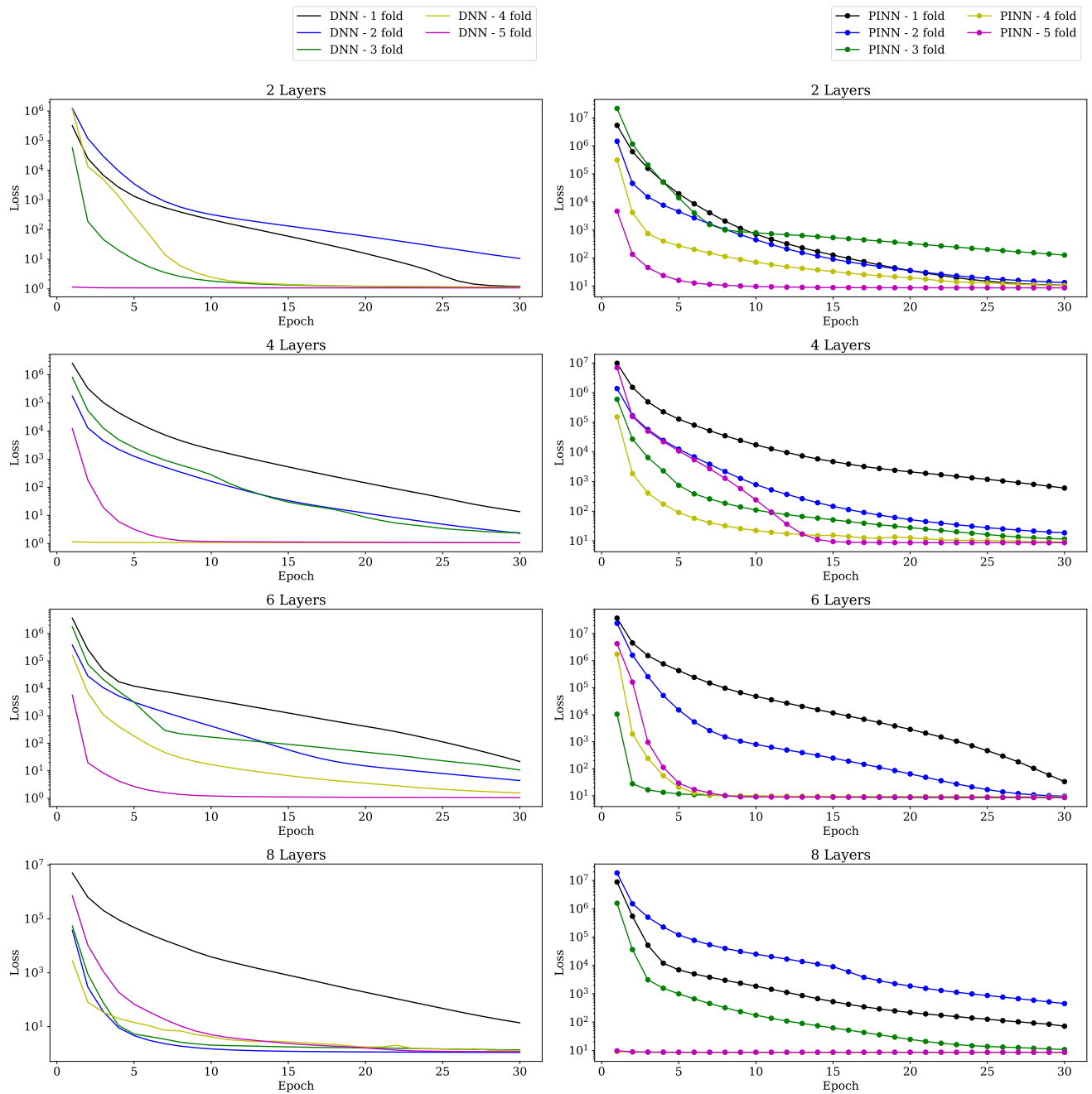


Figure 21. Training loss for DNN and PINN models in 5-Fold Cross-validation using 8235 samples and 30 epochs

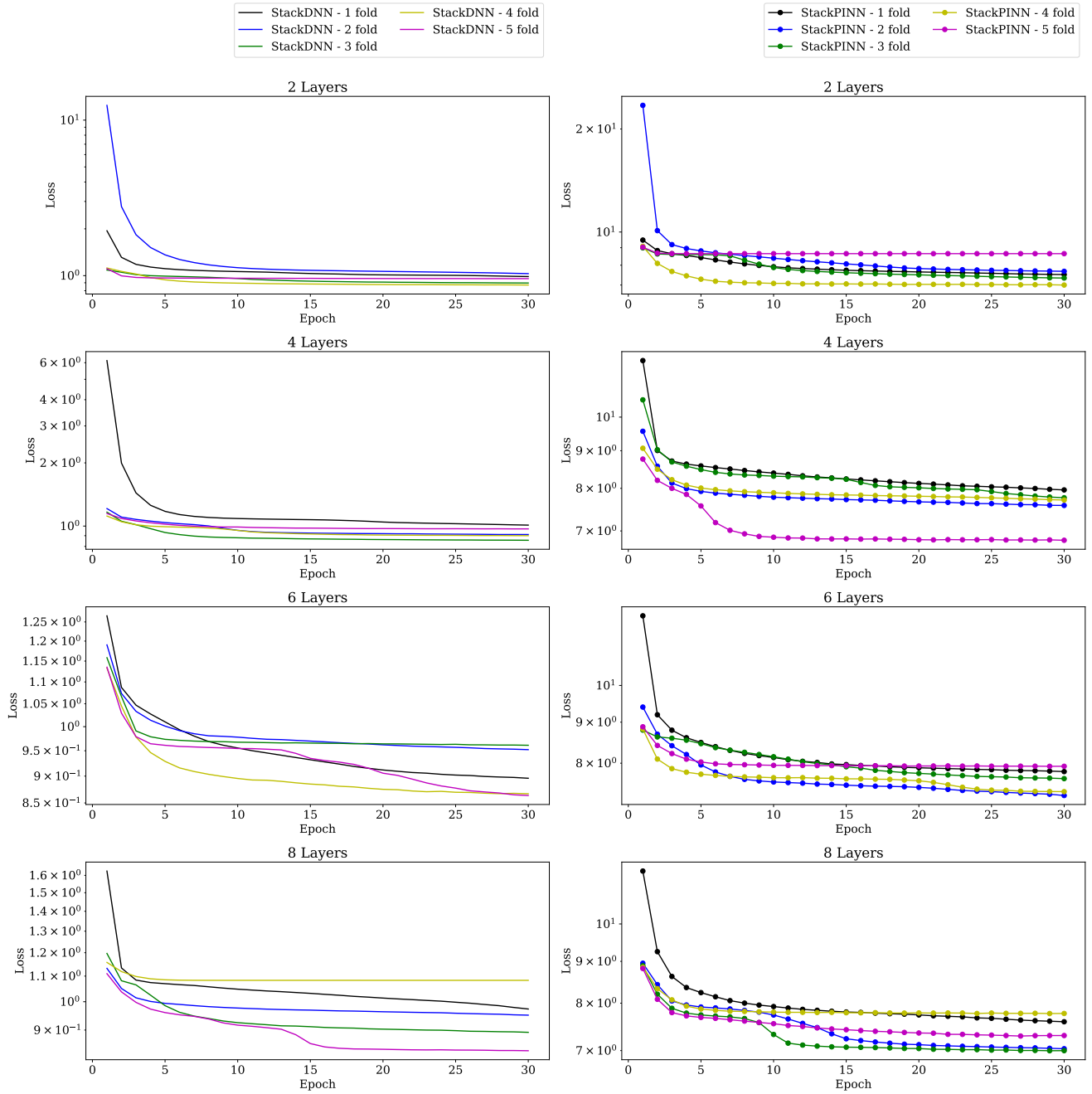


Figure 22. Training loss for StackDNN and StackPINN models in 5-Fold Cross-validation using 8235 samples and 30 epochs

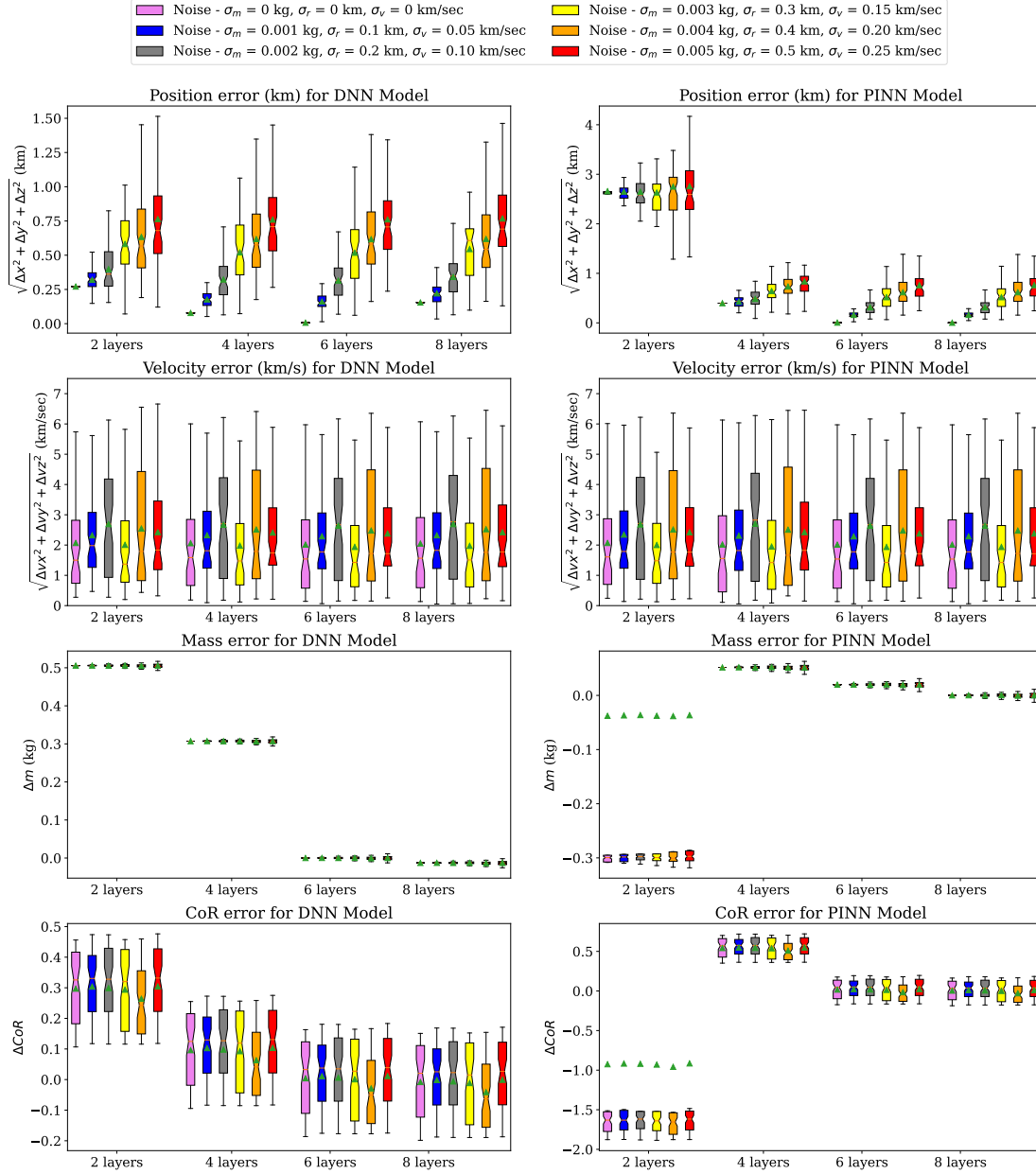


Figure 23. Error comparison of DNN and PINN models trained using 8235 samples and 30 epochs for multiple noise variations in LEMUR Satellites inelastic collision data

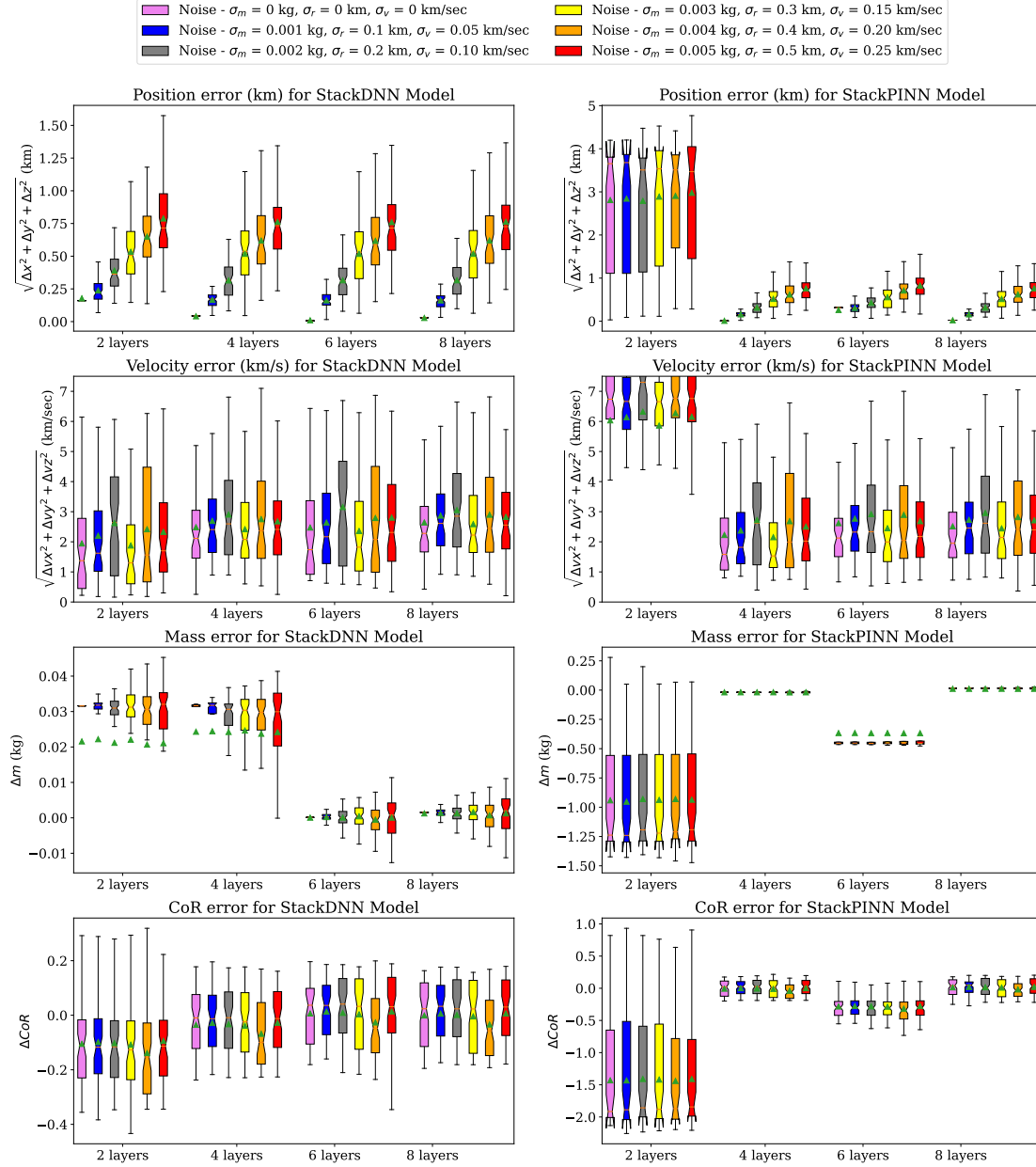


Figure 24. Error comparison of StackDNN and StackPINN models trained using 8235 samples and 30 epochs for multiple noise variations in LEMUR satellites inelastic collision data

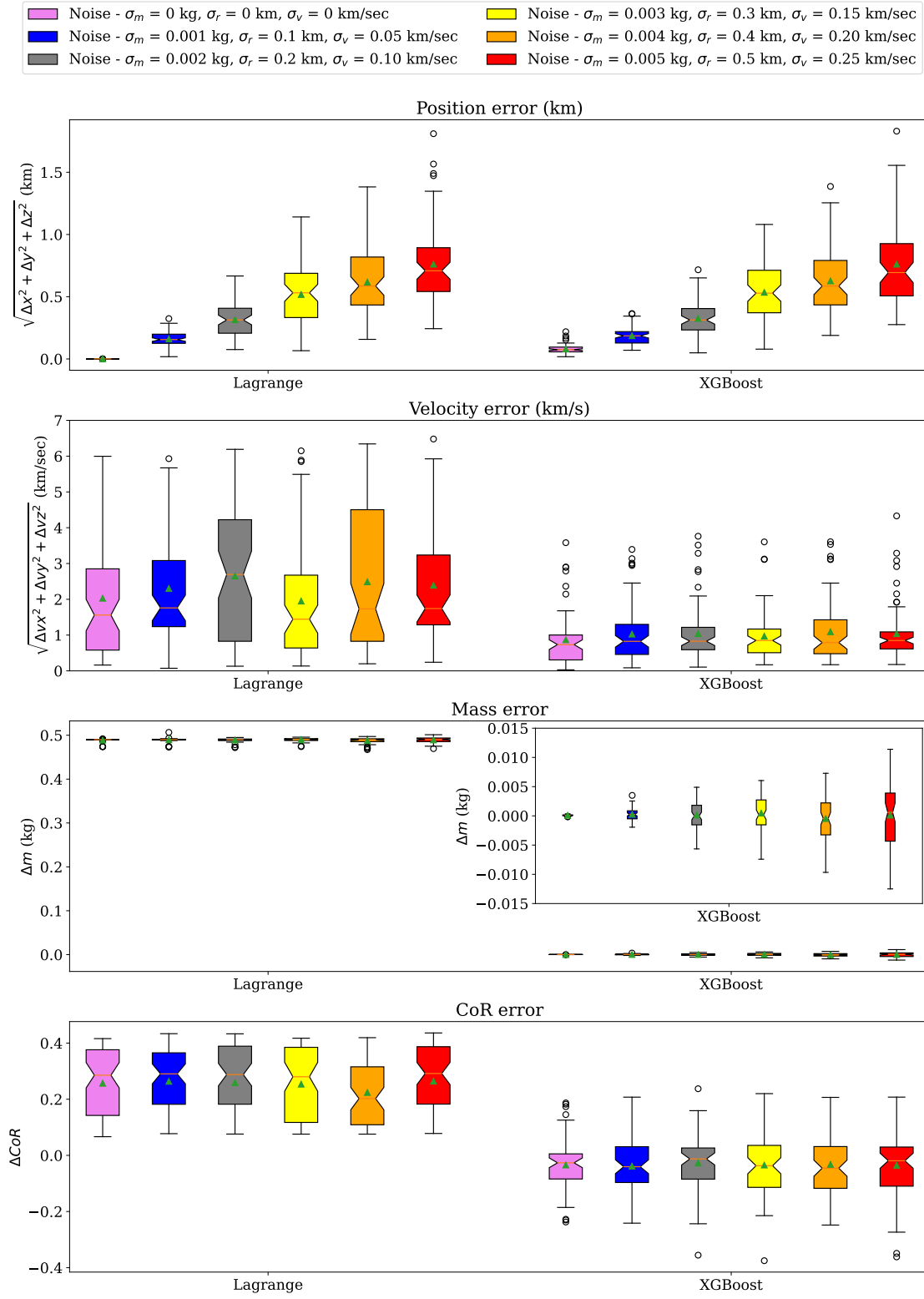


Figure 25. Error comparison of Lagrange and XGBoost models trained using 8235 samples for multiple noise variations in LEMUR satellites inelastic collision data

Models trained using 8235 samples and 50 epochs

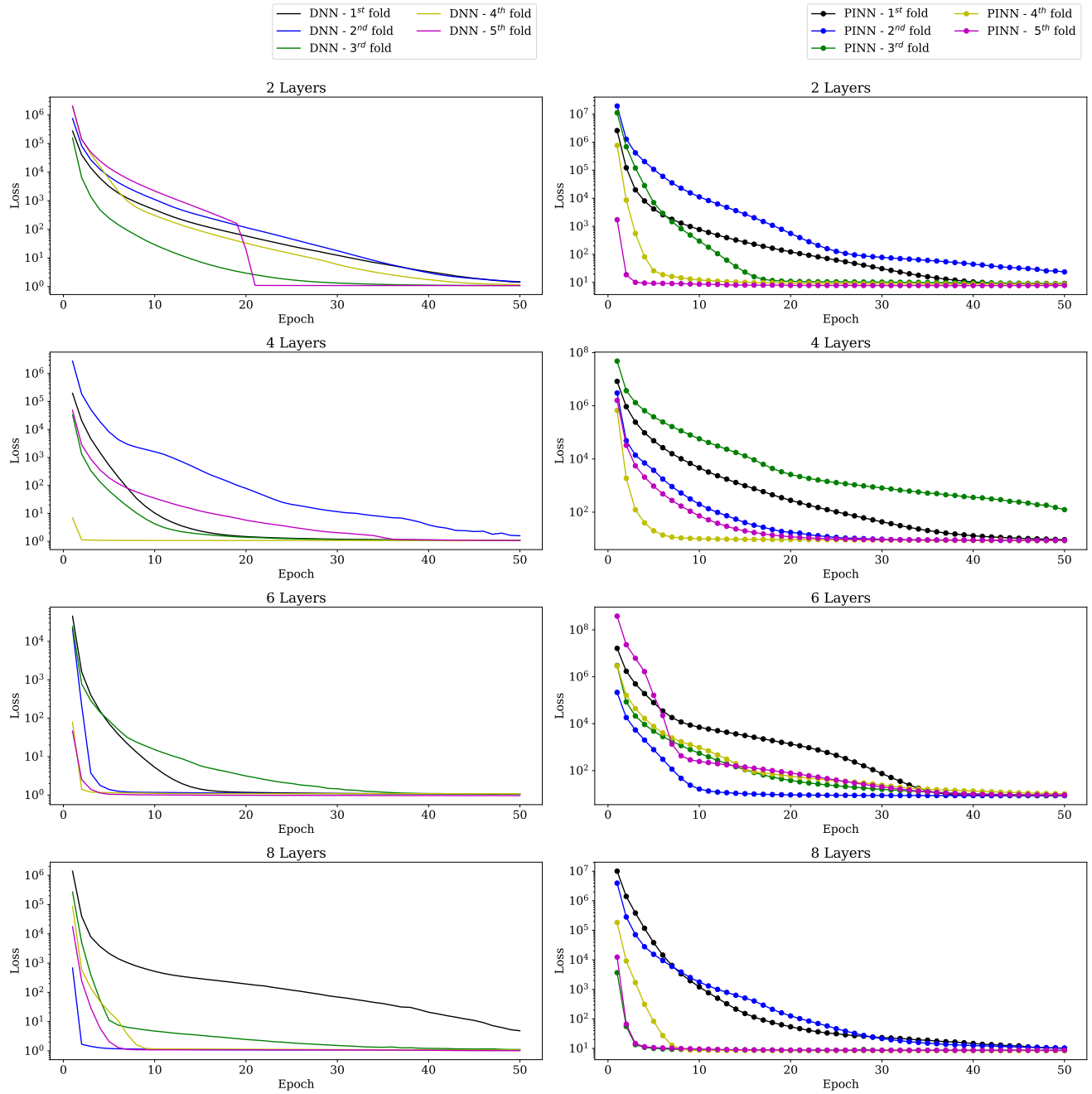


Figure 26. Training loss for DNN and PINN models in 5-Fold Cross-validation using 8235 samples and 50 epochs

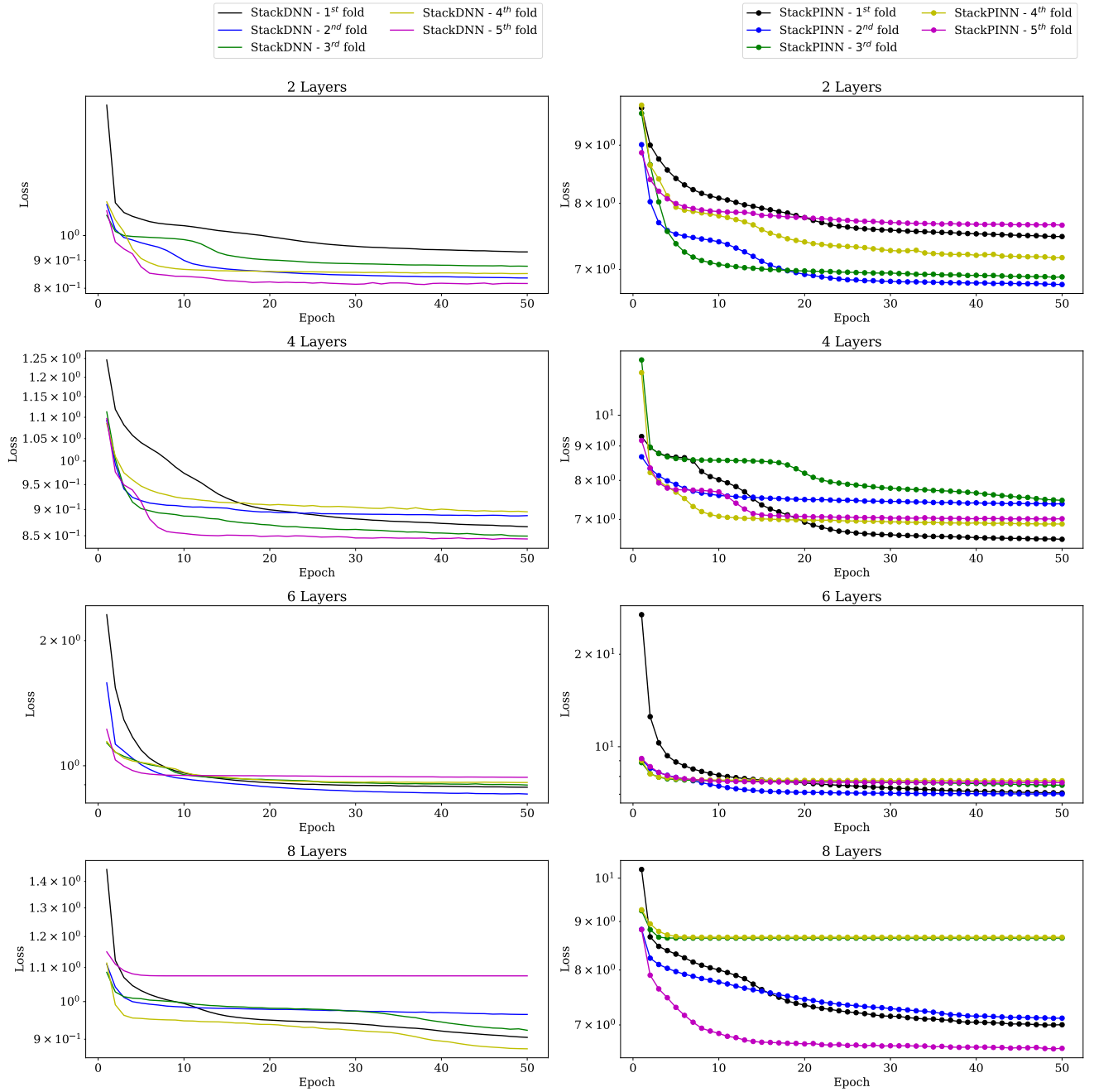


Figure 27. Training loss for StackDNN and StackPINN models in 5-Fold Cross-validation using 8235 samples and 50 epochs

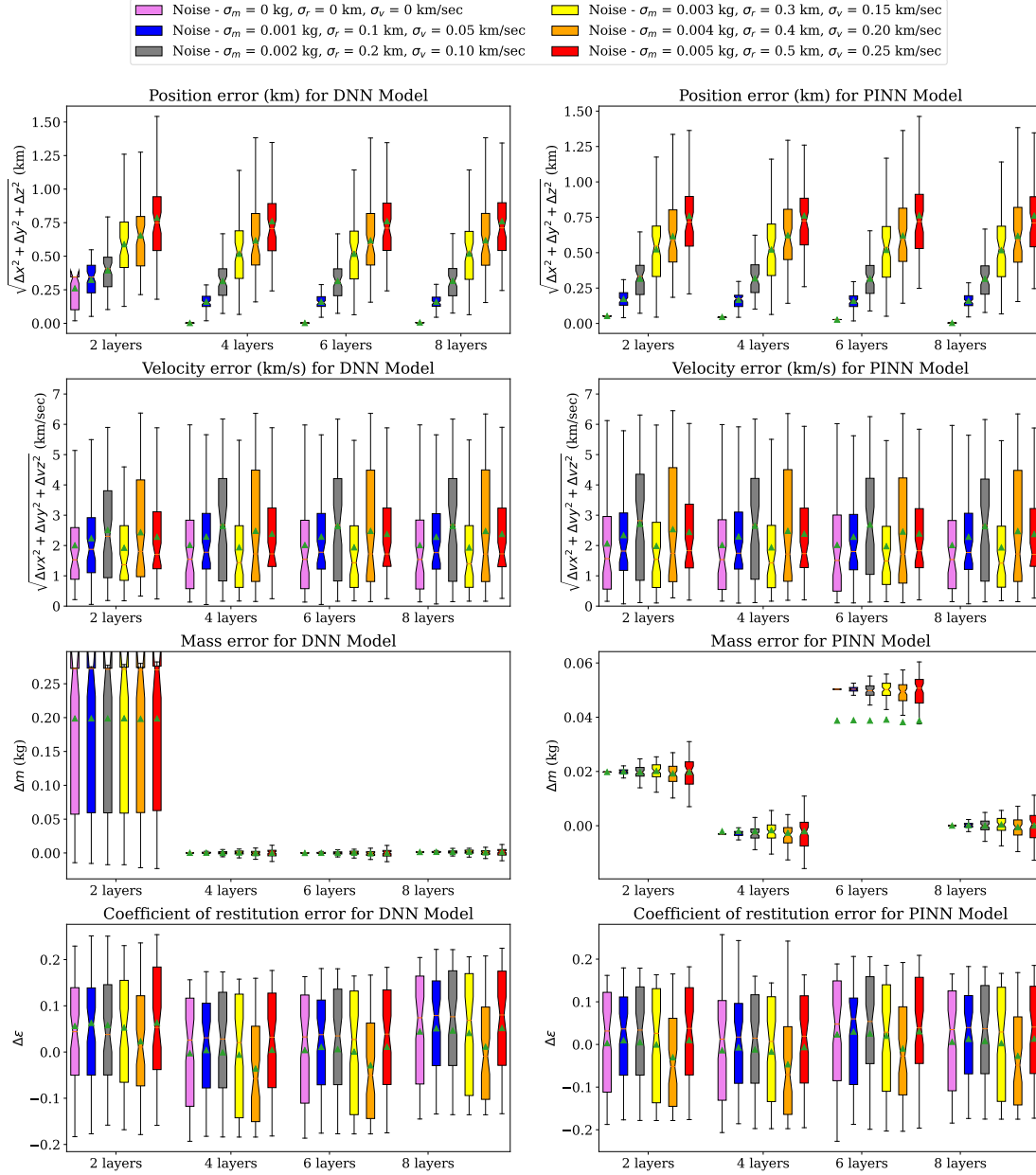


Figure 28. Error comparison of DNN and PINN models trained using 8235 samples and 50 epochs for multiple noise variations in LEMUR Satellites inelastic collision data

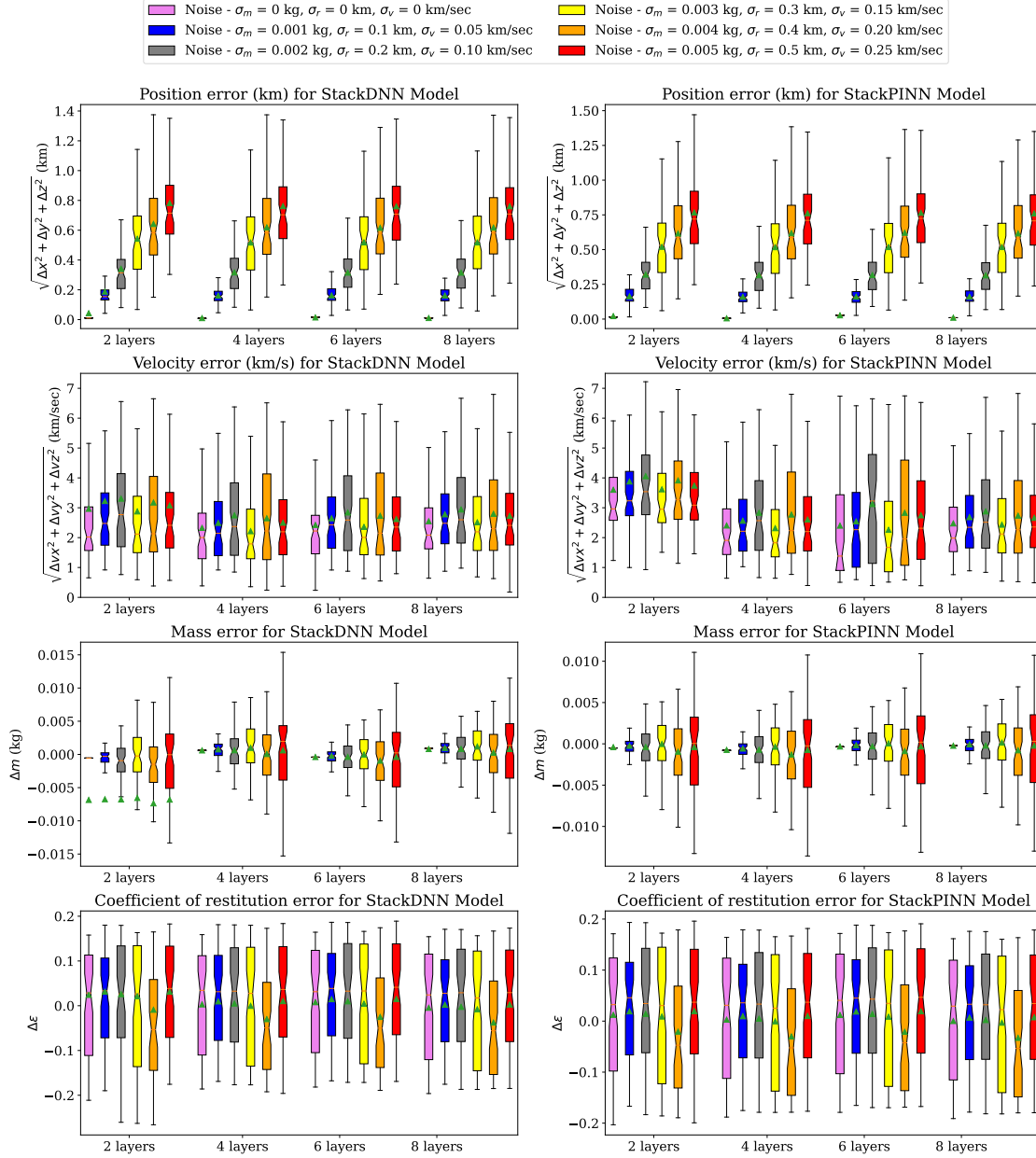


Figure 29. Error comparison of StackDNN and StackPINN models trained using 8235 samples and 50 epochs for multiple noise variations in LEMUR satellites inelastic collision data

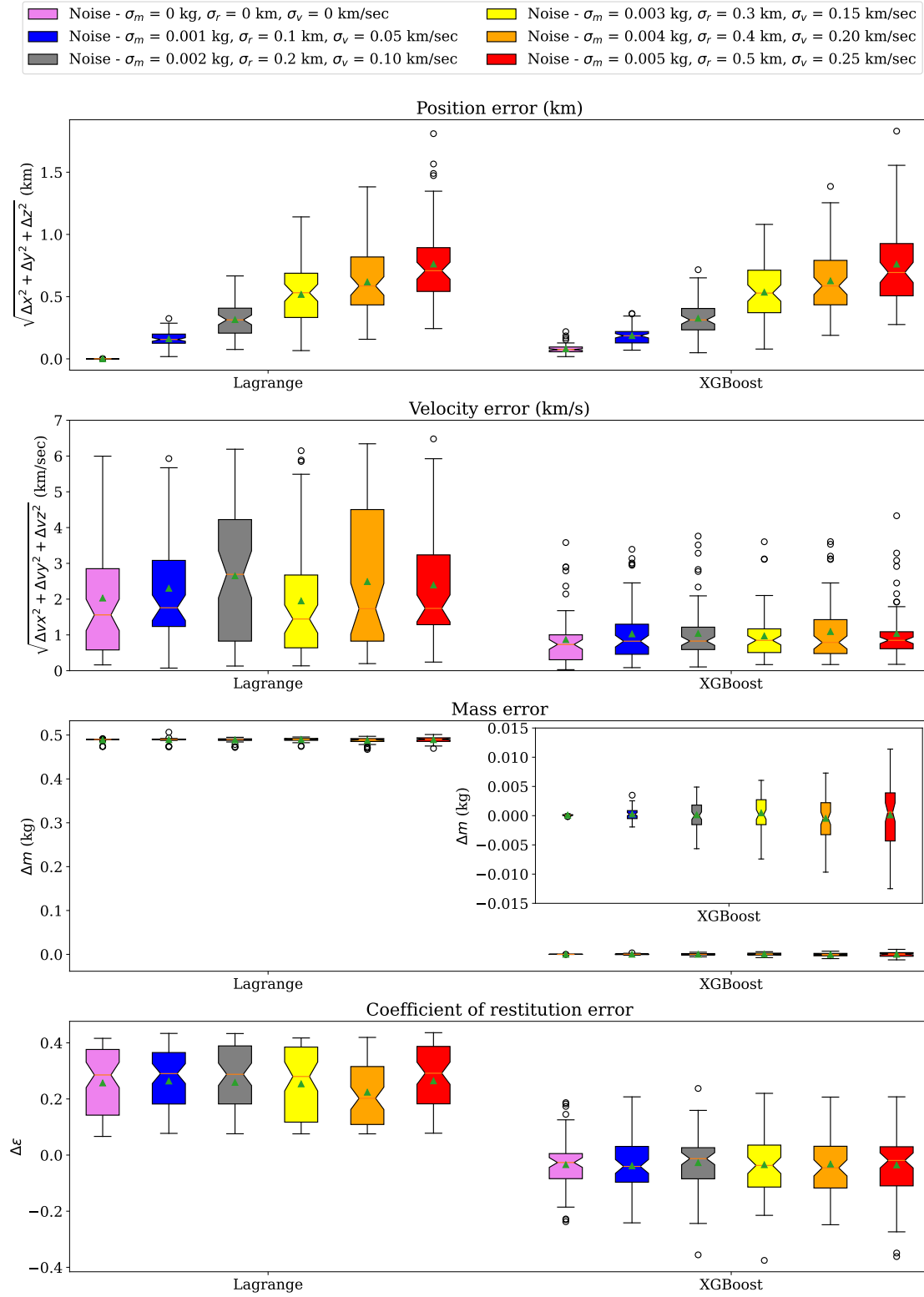


Figure 30. Error comparison of Lagrange and XGBoost models trained using 8235 samples for multiple noise variations in LEMUR satellites inelastic collision data