

PhaseFlow4D: Physically Constrained 4D Beam Reconstruction via Feedback-Guided Latent Diffusion

Supplementary Material

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1. Appendix

All six projections of the 4D phase space are shown for the lowest and highest level of charge neutralization at the start of the extremum seeking time-varying charge neutralization tracking problem in Figure 1.

Figures 2-11 show detailed comparisons of random test data reconstructions.

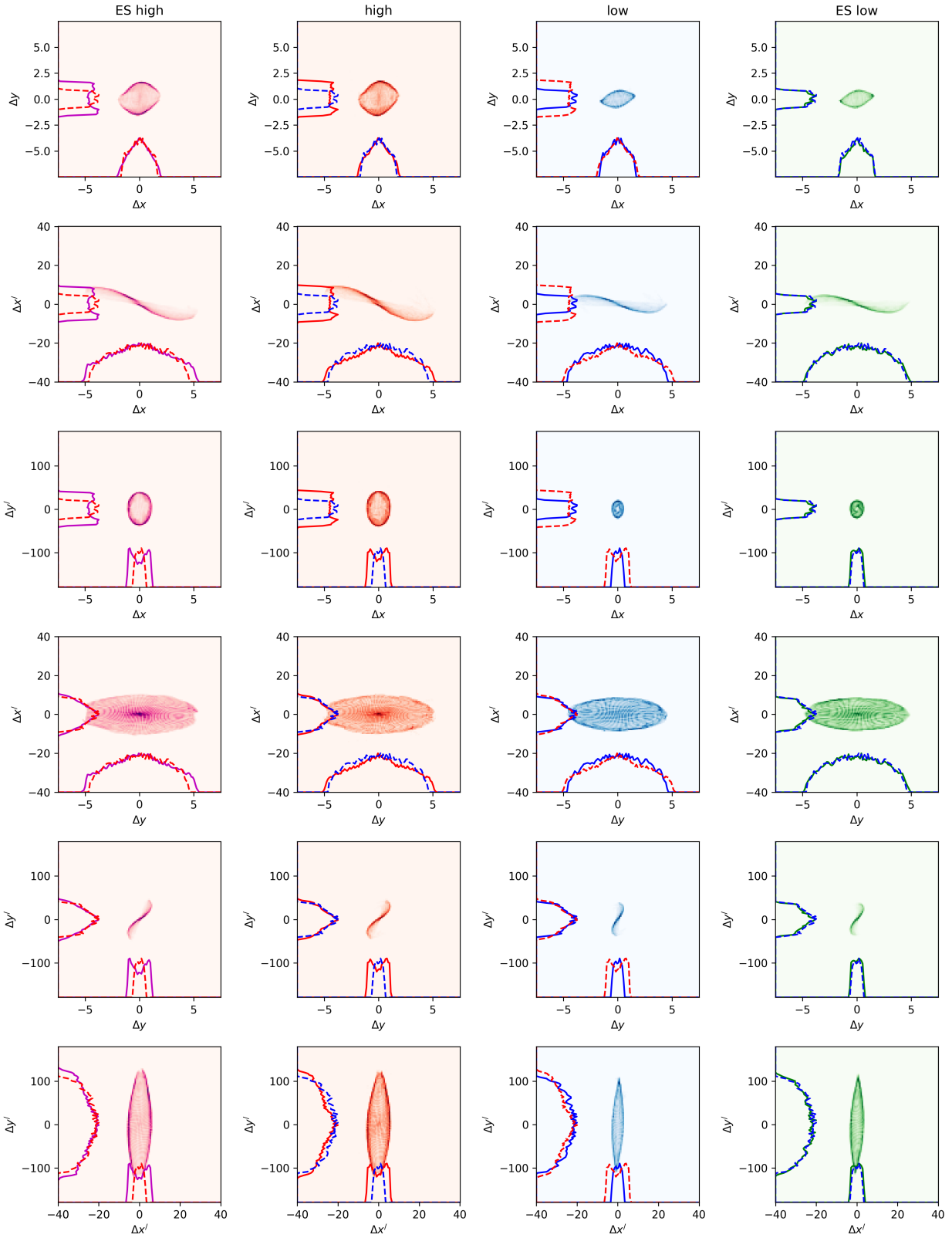


Figure 1. True and tracked projections of the beam are shown for various charge states during the ES-based tracking procedure.

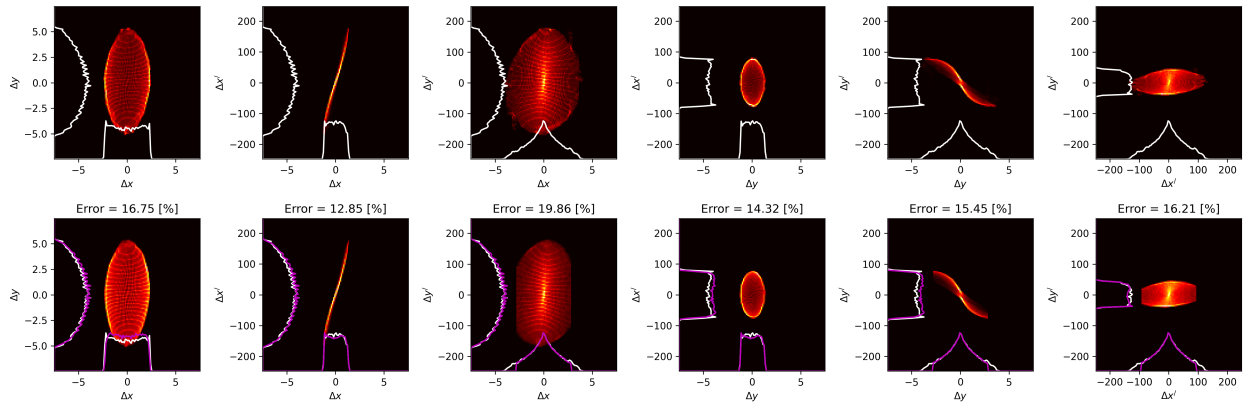


Figure 2. True and generated examples from test set.

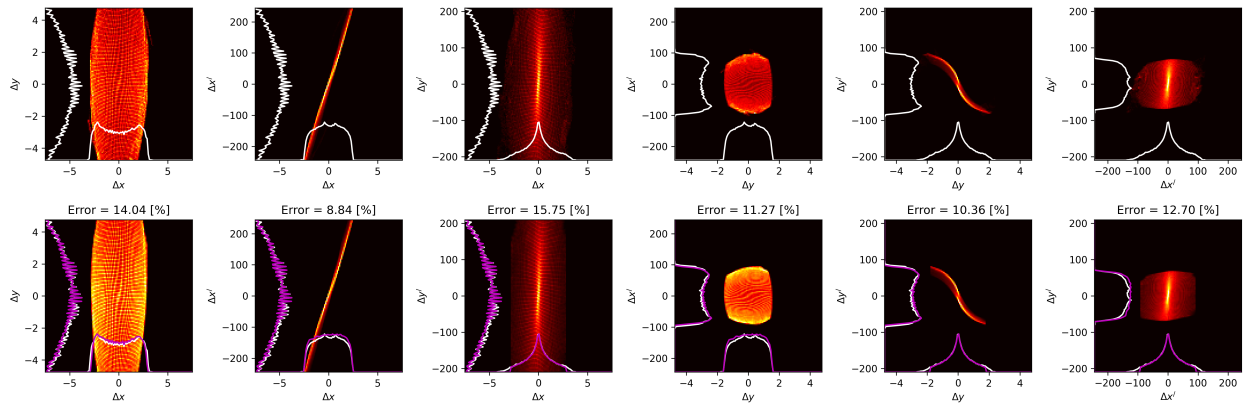


Figure 3. True and generated examples from test set.

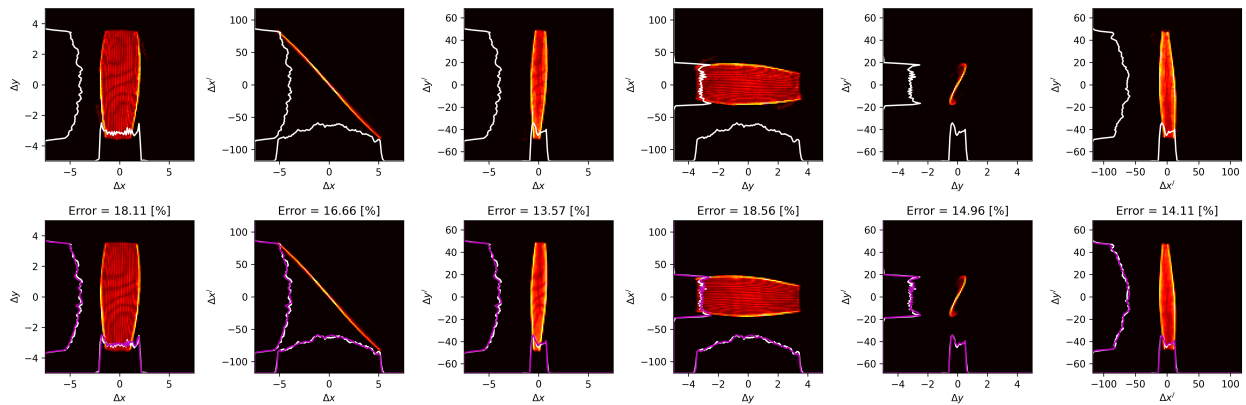


Figure 4. True and generated examples from test set.

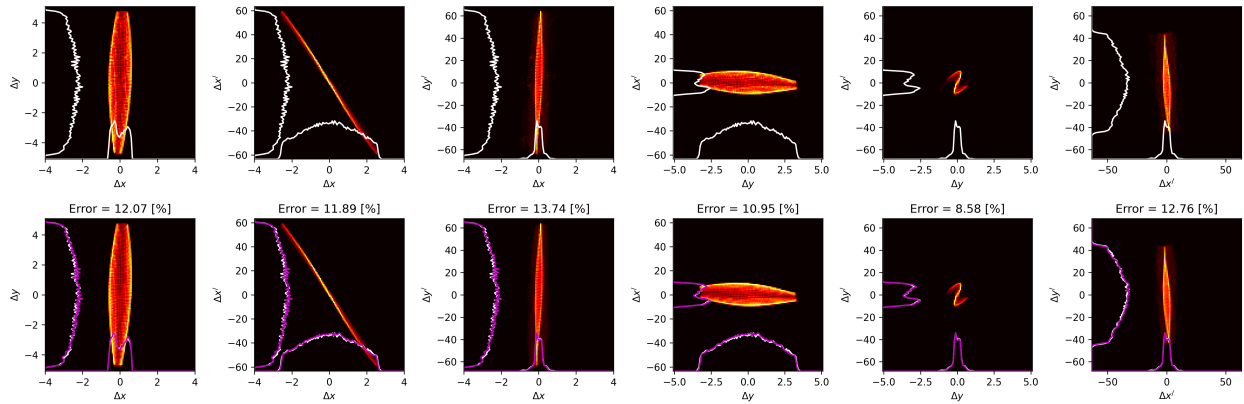


Figure 5. True and generated examples from test set.

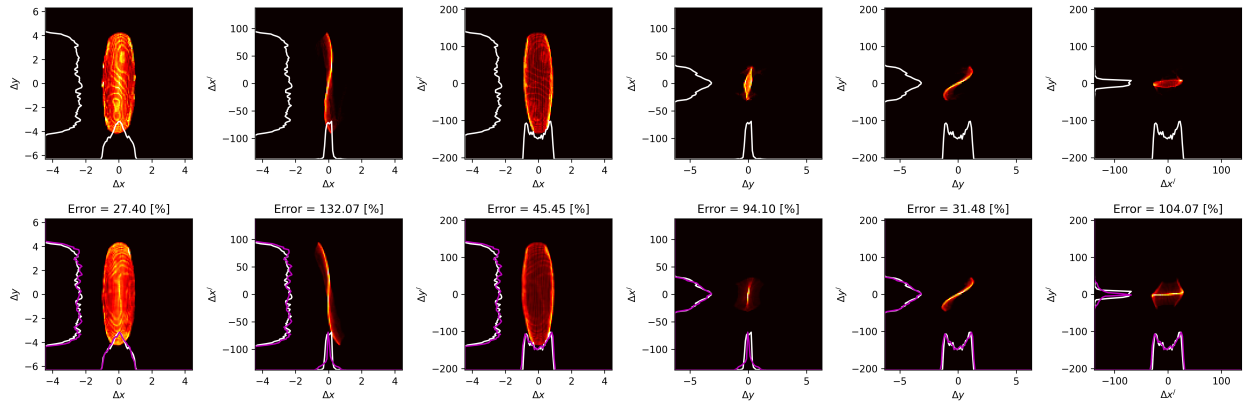


Figure 6. True and generated examples from test set.

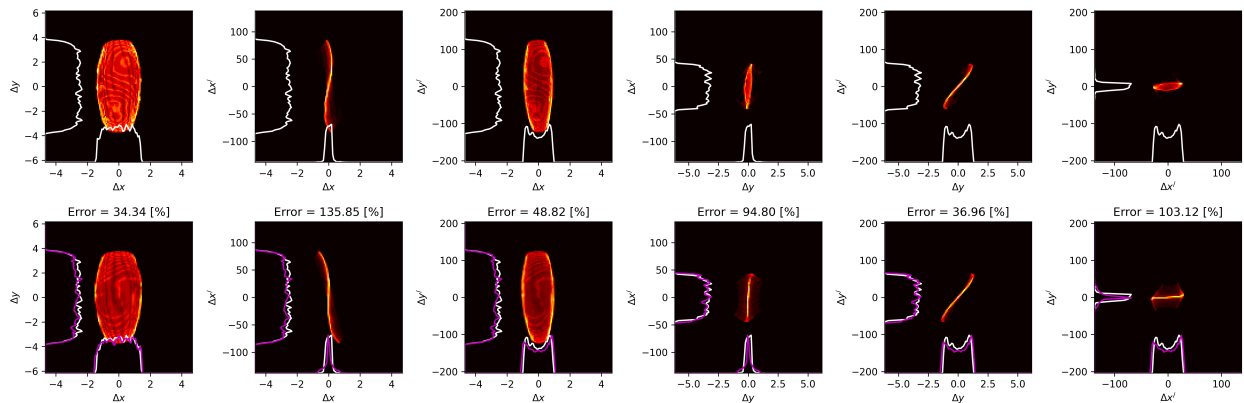


Figure 7. True and generated examples from test set.

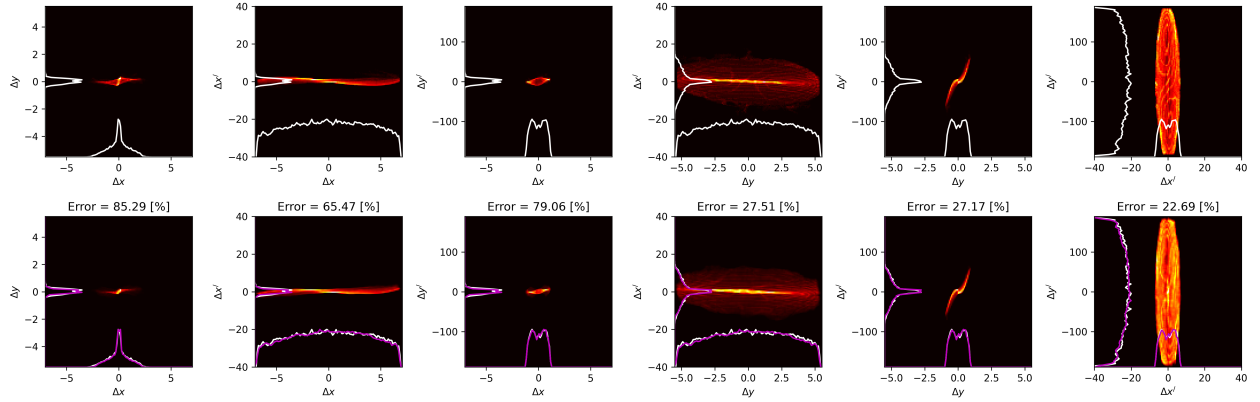


Figure 8. True and generated examples from test set.

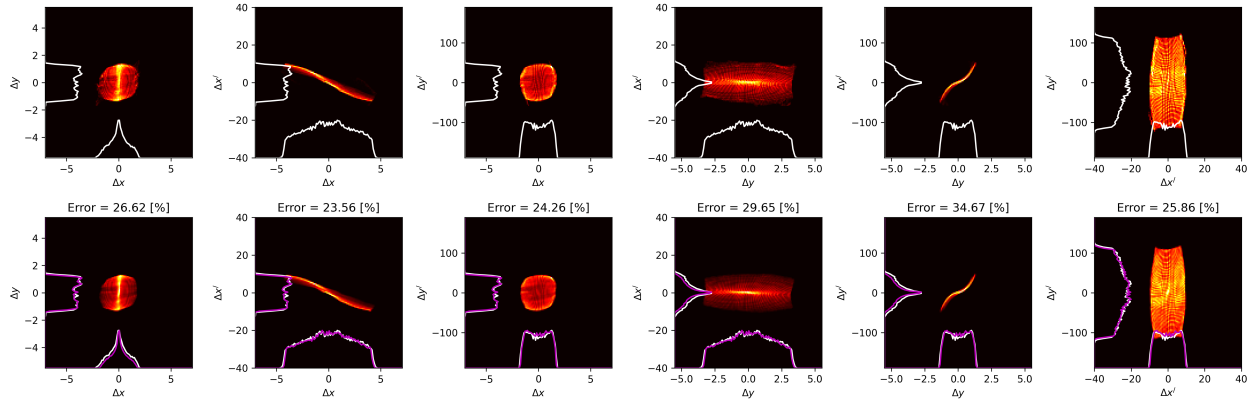


Figure 9. True and generated examples from test set.

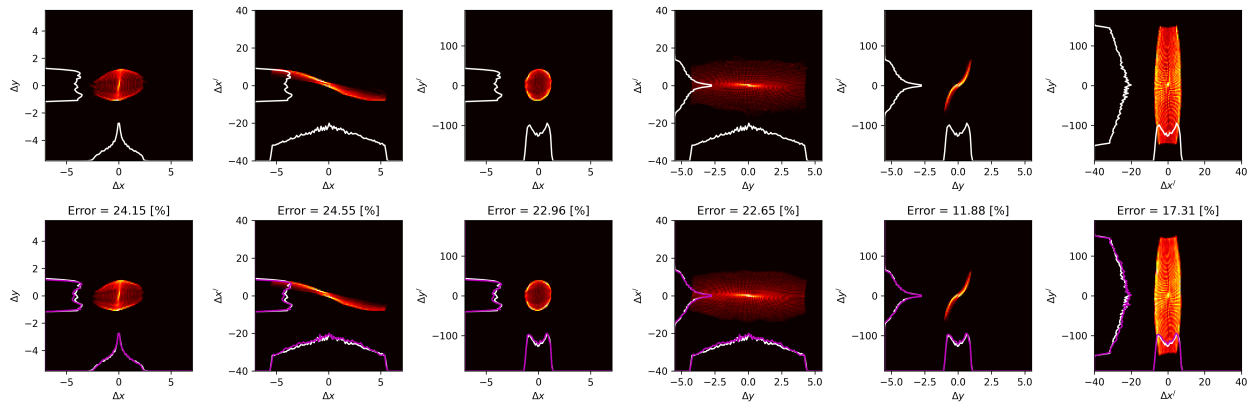


Figure 10. True and generated examples from test set.

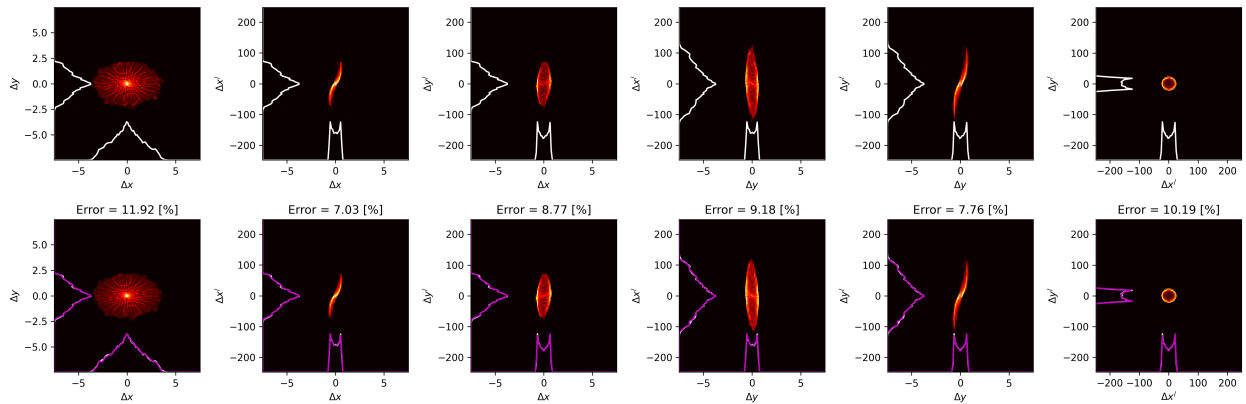


Figure 11. True and generated examples from test set.