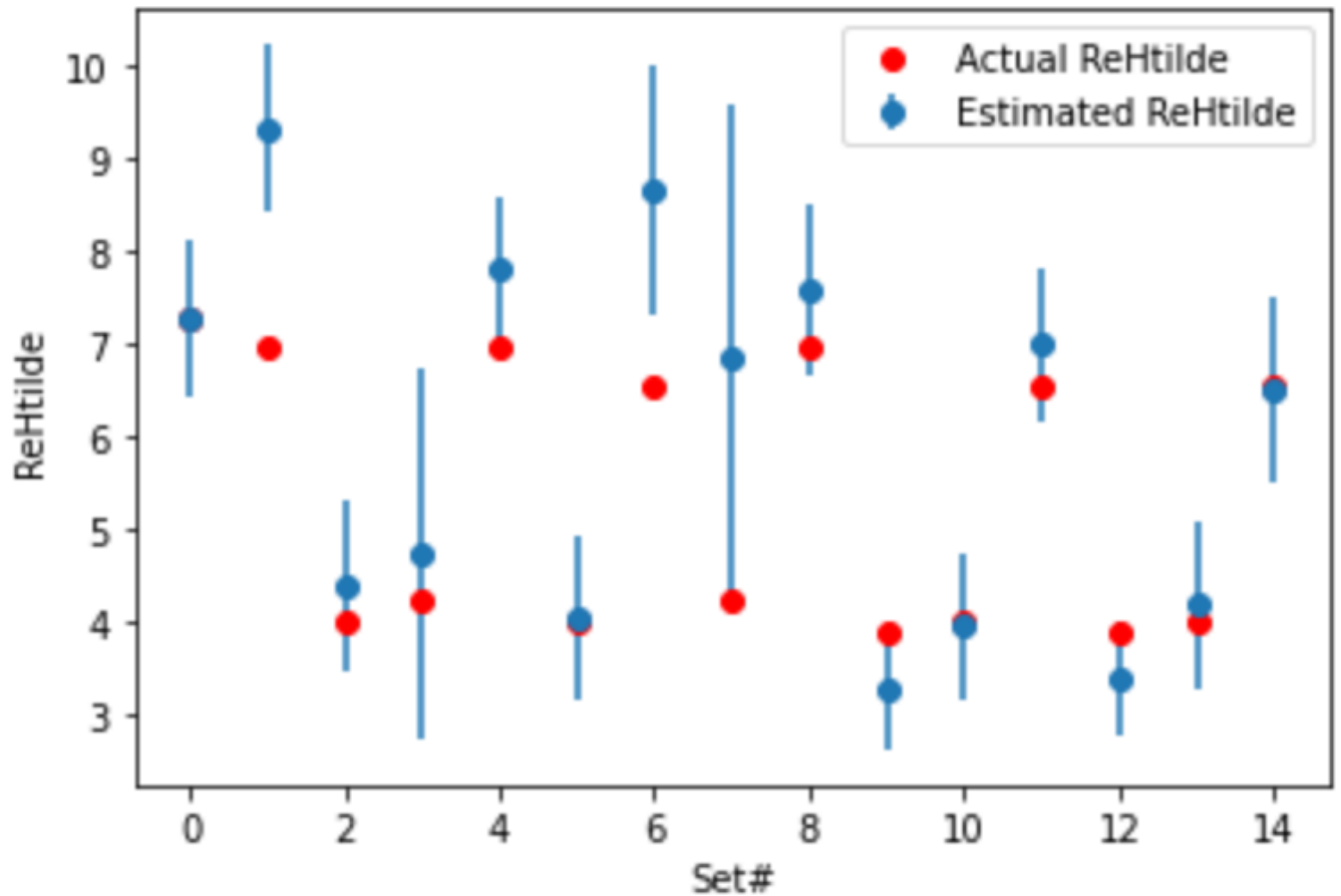
Optimizing CFF bounds

Systematic vs Predictive Error from errF (VA formalism, dataset #2, may not apply to dataset #3)

```
uts.plotError(y_yhat, err, "ReHtilde")
```



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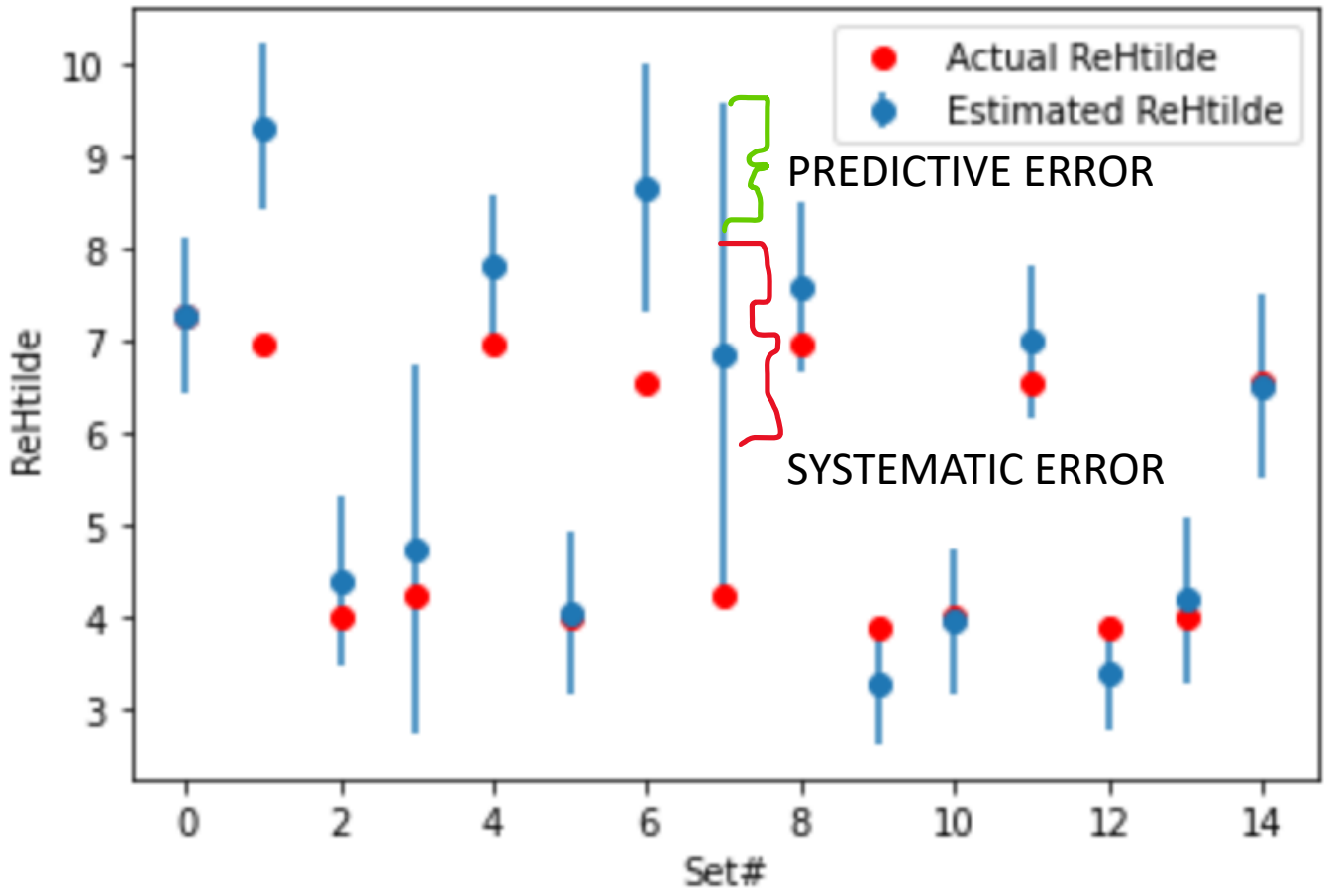
```



Assumption: errF is normally distributed

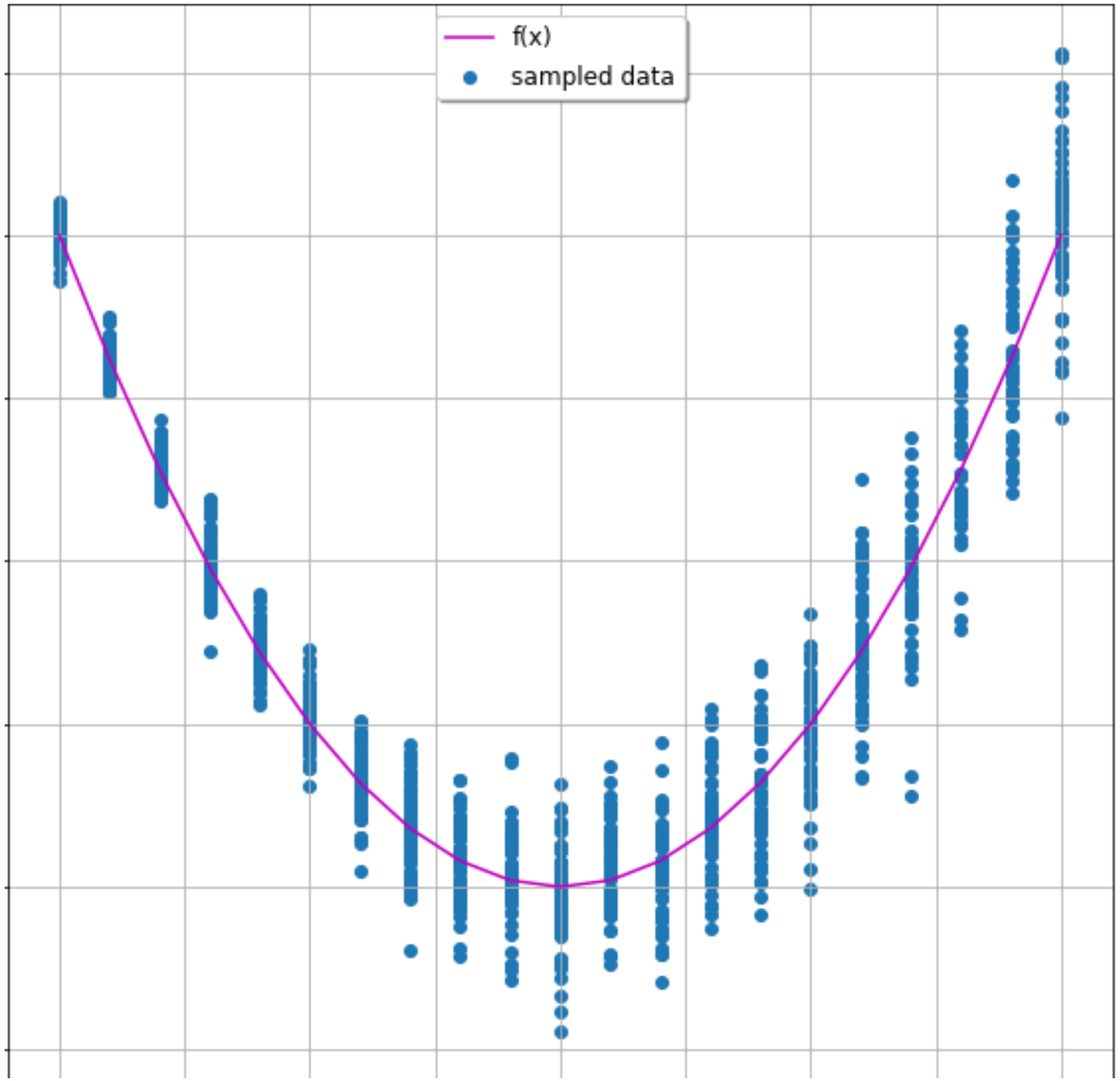
Normally Distributed Error in predictive variable implies:
No bias or inconsistency is introduced from using noisy F value, only increased variance

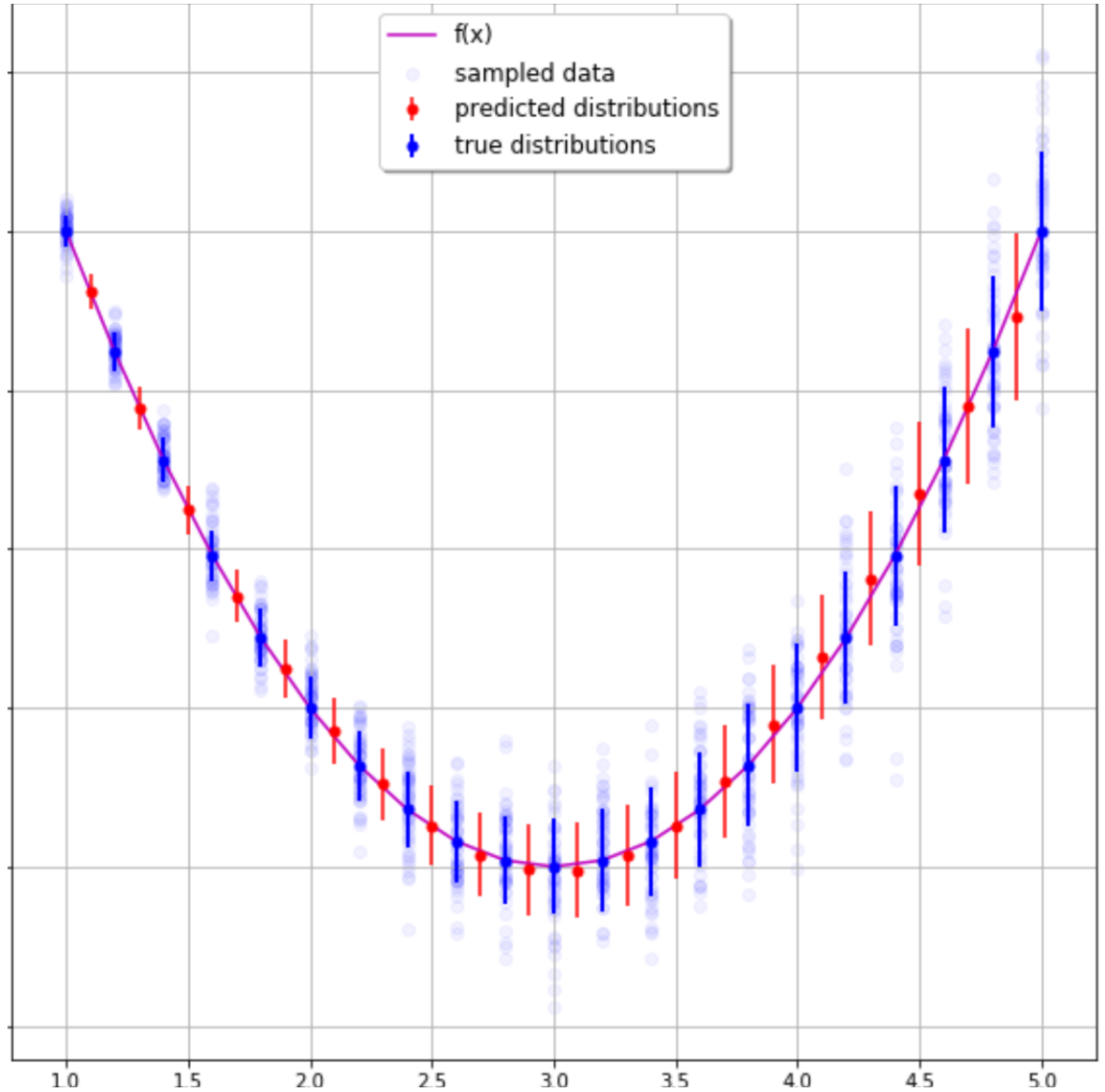
Training for each replica does not improve accuracy of prediction

1: Mathematically derive error term for each Compton form factor (Can also be estimated)
**Basic Idea - Find variance from variance in total cross section -> interference term -> individual CFFs*

Goal: Compare Total Model Variance with Systematic Variance to determine efficiency of the model across datasets

2: Implement loss function that takes into account differences in error for each CFF for global fit given derivation from 1


f(x)
sampled data


f(x)
sampled data
predicted distributions
true distributions
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0