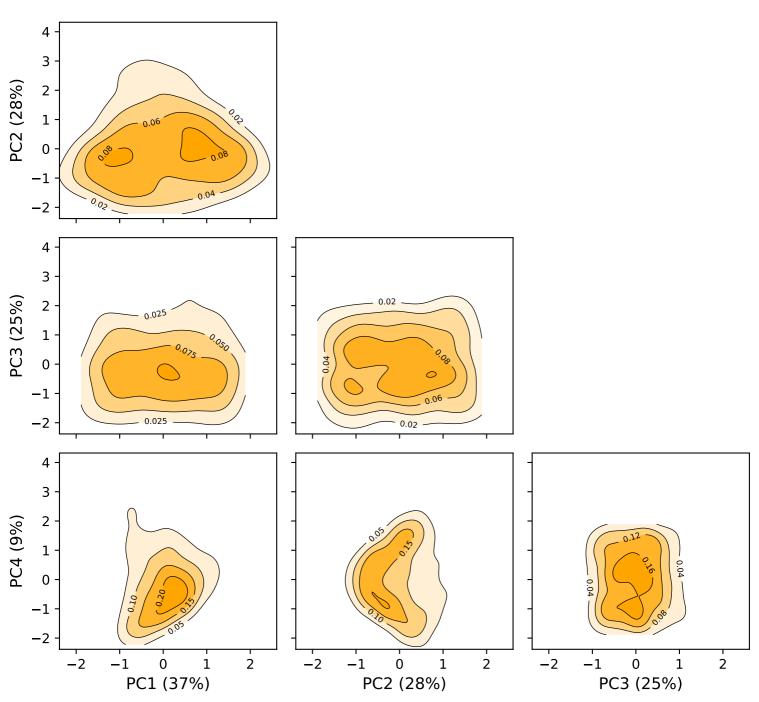
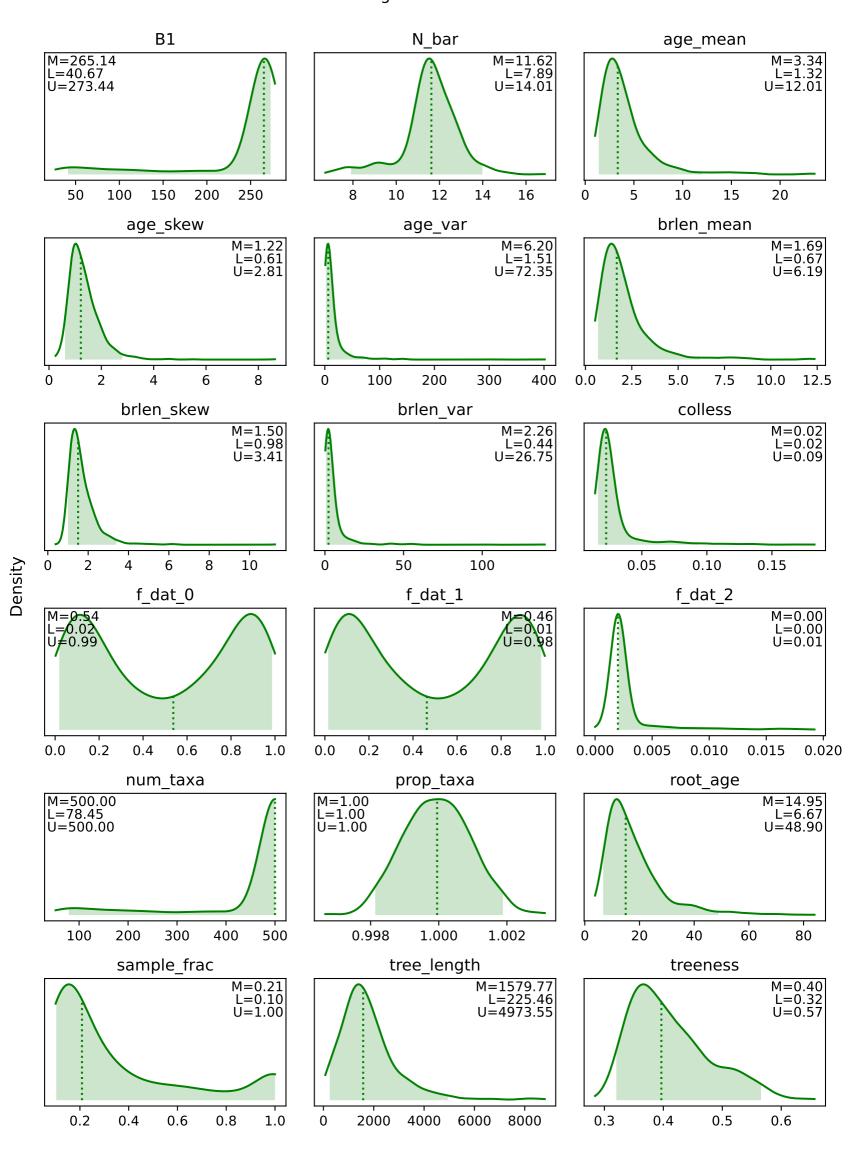


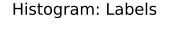
PCA: Labels

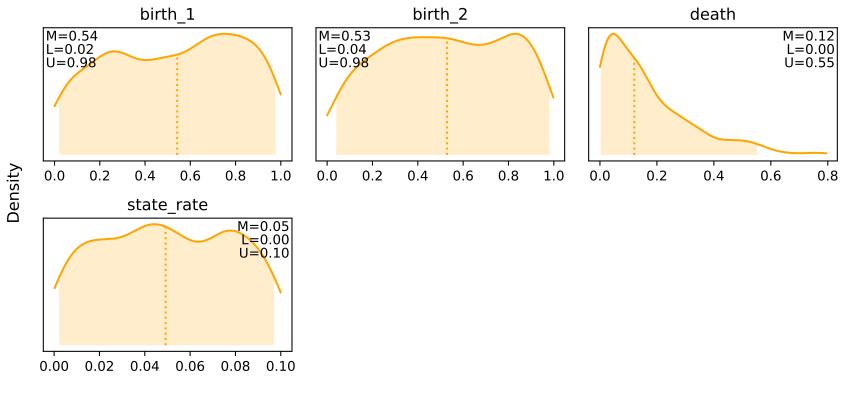


Histogram: Aux. data



Data

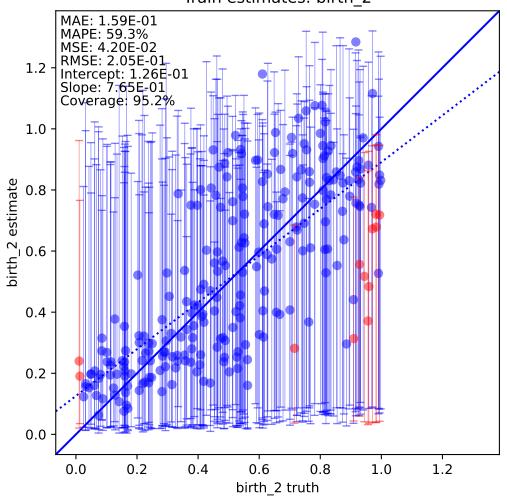




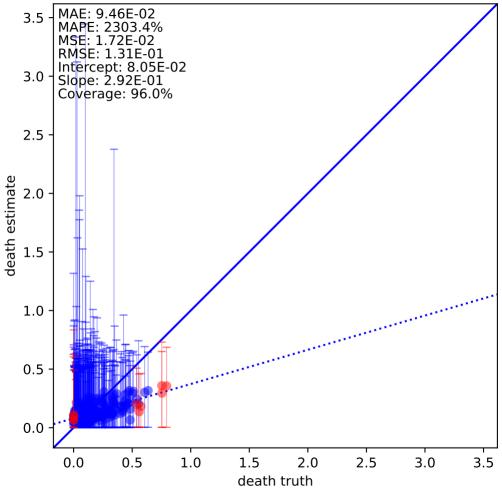
Data

Train estimates: birth 1 MAE: 1.28E-01 MAPE: 198.2% 1.75 Intercept: 1.13E-01 Slope: 7.95E-01 Coverage: 97.6% 1.25 birth\_1 estimate 1.00 0.75 0.50 0.25 0.00 0.50 1.25 0.25 0.75 1.00 1.50 1.75 0.00 birth 1 truth

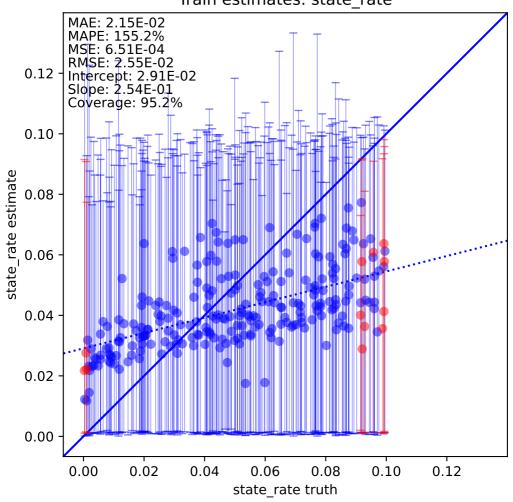
Train estimates: birth\_2



Train estimates: death



Train estimates: state\_rate



Test estimates: birth 1 MAE: 2.49E-01 MAPE: 612.6% MSE: 6.64E-02 RMSE: 2.58E-01 Intercept: 2.21E-01 Slope: 3.26E-01 Coverage: 20.0% 0.6 birth\_1 estimate 0.4 0.2 0.0 0.2 0.4 0.0 0.6 8.0 birth\_1 truth

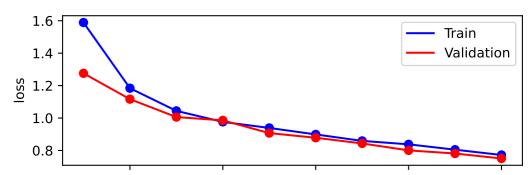
Test estimates: birth 2 MAE: 2.37E-01 MAPE: 30.8% 3.0 MSE: 7.35E-02 RMSE: 2.71E-01 Intercept: 2.19E-01 Slope: 4.00E-01 Coverage: 0.0% 2.0 birth\_2 estimate 1.5 1.0 0.5 0.0 0.5 0.0 1.0 1.5 2.0 2.5 3.0 birth\_2 truth

Test estimates: death MAE: 1.70E-01 MAPE: 551.7% MSE: 4.99E-02 RMSE: 2.23E-01 Intercept: 1.10E-01 Slope: -8.11E-03 Coverage: 60.0% 8.0 death estimate 0.6 0.4 0.2 0.0 0.2 0.6 1.0 0.0 0.4 8.0 death truth

Test estimates: state rate MAE: 7.32E-03 MAPE: 42.9% 0.175 -MSE: 9.49E-05 RMSE: 9.74E-03 Intercept: 2.64E-02 Slope: 3.39E-01 Coverage: 40.0% 0.150 0.125 state rate estimate 0.100 0.075 0.050 0.025 0.000 0.025 0.000 0.050 0.075 0.100 0.125 0.150 0.175

state rate truth

## Training history: entire network



Training history: param\_lower Train 0.3 Validation <u>ssol</u> 0.2 0.1 0.5 0.4 acc 0.3 0.2 3 mae 2 1 8 4 2 6 10 **Epochs** 

Training history: param\_upper Train Validation 0.2 loss 0.1 0.6 0.5 Metrics 0.4 0.4 0.3 2.5 9 2.0 E 1.5 1.5 1.0 2 8 4 6 10 **Epochs** 

Training history: param\_value

