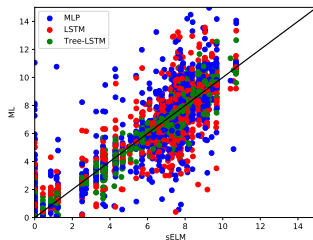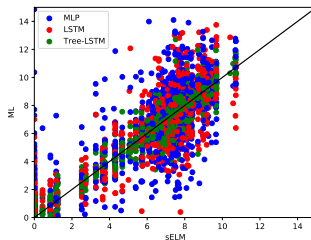# Tree-LSTM NN Surrogate Models

June 27, 2019

Quantities of Interest of Land Model-Older results

- Trained with 50 samples
- Validation with 50 samples
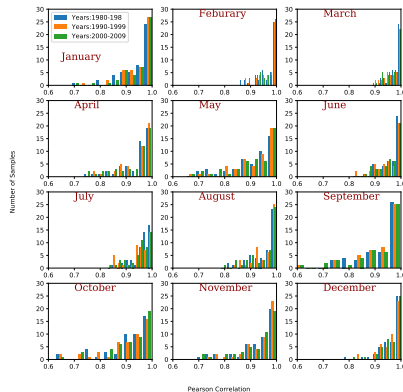- Tree-LSTM outperforms MLP and LSTM RNN

(a) GPP:March Training

(b) GPP:March Validation

Quantities of Interest of Land Model-Older Results

- Tree-LSTM outperforms MLP and LSTM RNN for each month

(a) GPP

Current Work

- Runs on CORI
- 1000 samples per site
- Spatial sampling (East, Middle, Western US)
- PCE Comparison: Legendre polynomials
- Various sites: approximation is between $5 - 30\%$
- GSA analysis