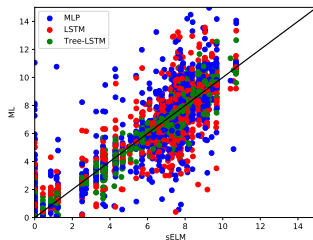


# Tree-LSTM NN Surrogate Models

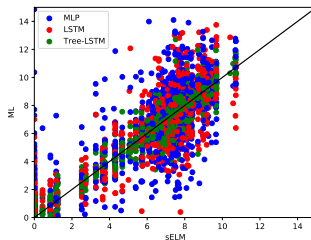
June 27, 2019

# Quantities of Interest of Land Model-Older results

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



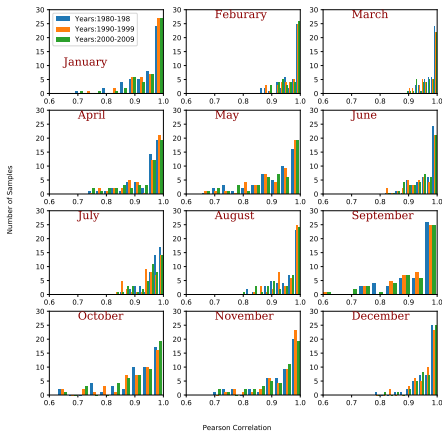
(a) GPP:March Training



(b) GPP:March Validation

# Quantities of Interest of Land Model-Older Results

- Tree-LSTM outperforms MLP and LSTM RNN for each month
- Pearson correlation for all samples per month



# 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