Evaluation of S2S Model Performance for Forecasting US Extreme Precipitation Events

Devin McAfee, Dr. Elinor Martin, and Dr. Jason C. Furtado
Extreme Events

- Extreme event database (Dickinson et al., 2021).
Data and Methods

- Livneh
- S2S Prediction Project reforecast ensemble:
  - Pointwise linear regression
  - Lead times (+-4 days) from start of each event: 5, 12, 19, 26, 33, 40, and 47 days.
Model Comparisons

- Météo-France performed strongest, followed by ensemble-mean precip.
- Negligible skill in identifying extreme points across ensemble.
Model Comparisons

18.5-to-53.5-day-target-lead-time means
Spatial Skill Distribution

- Correlation and anomaly correlation coefficient strongest for West.
- No regional pattern in extreme point prediction skill.
Spatial Skill Distribution

Cluster-averaged correlation coefficient for ensemble-mean precip
Lead Time Skill Distribution

Event-averaged correlation coefficient and anomaly correlation coefficient for ensemble-mean precip
Conclusions and Next Steps

• High correlation, particularly in western clusters.
• Insignificant skill in detecting extreme points.
• Quantile mapping post-processing.
• Wet vs. dry season.
References

