Forecasts and Monitoring System based on WRF model simulations over La Plata Basin

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1. Forecasts and Monitoring System

A routine forecasts and monitoring system was developed for South America. It is available since 2012 on www.cevarcam.unl.edu.ar/en/forecast and www.atmos.umd.edu/~berbery/research/forecasts for droughts, wet spells, rainy events, hot or cold waves, ...

2. Applications

Monitoring of wet spell or drought

Weather forecasting and monitoring systems based on regional models are becoming increasingly relevant for decision support in agriculture and water management, but HOW RELIABLE ARE THESE FORECASTS?

3. Evaluation of rain and temperature

142 observations sites to evaluate 2 years of forecasts. First, contingency tables are computed for each forecasted day and each rain gauge

<table>
<thead>
<tr>
<th>Rain gauges</th>
<th>Observed YES</th>
<th>Observed NO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecasts YES</td>
<td>Hits (h)</td>
<td>False alarms (fa)</td>
<td>Forecasts YES</td>
</tr>
<tr>
<td>Forecasts NO</td>
<td>Misses (m)</td>
<td>Correct negatives (cn)</td>
<td>Forecasts NO</td>
</tr>
<tr>
<td>Total</td>
<td>Observed YES</td>
<td>Observed NO</td>
<td>Total</td>
</tr>
</tbody>
</table>

Then, a set of skill scores are calculated to evaluate the performance of precipitation forecasts

Results:

4. Monitoring

Weather forecasting and monitoring systems based on regional models are becoming increasingly relevant for decision support in agriculture and water management, but HOW RELIABLE ARE THESE FORECASTS?

5. Conclusions

- The system show high prediction performance with 7-day lead time
- 70% of rain and no-rain days are correctly predicted.
- Temperature observations and forecasts are highly correlated (r>0.80)
- The model products demonstrated its ability to reproduce and complements the observed drought in southern Brazil and the above normal precipitation in northeastern Argentina during the spring of 2014.

6. References


7. Acknowledgments

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