Two Consecutive ARs Made Landfall in the Pacific Northwest

- Two ARs made landfall over the extreme U.S. Pacific Northwest over 5 days
- Forecast confidence was high for the first AR and less certain for the second AR
- While IVT magnitudes were forecasted to be moderate, precipitation forecasts were low due to unfavorable AR orientation
- This summary will focus on the performance of the forecasts that were presented in the Nov. 4th Update

Forecast

Event 1:
4–6 Nov 2016

IVT ~1000 kg m\(^{-1}\) s\(^{-1}\),
IWV ~36 mm along coast

 IWV

IVT and IWV were both forecasted very well for event 1

NCEP GFS IVT (kg m\(^{-1}\) s\(^{-1}\); shaded), IVT Vector, and SLP (hPa; contours)
Initialized: 1200 UTC 11/04/2016
Valid: 0600 UTC 11/05/2016

IWV

For California’s DWR’s AR Program

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Summary by C. Hecht 3 PM PT Fri 05 Nov 2016
Overall structure and orientation of second AR was very well forecasted.

Analyzed IVT magnitudes were larger (~100–200 kg m⁻¹ s⁻¹) than forecasted over Olympic Mts.

I WV content slightly under forecasted.
QPE shows the high precipitation amounts were up to 240 mm over the Olympic Mountains.

While the location of maximum precipitation was correctly forecast, precipitation accumulations were under forecast by up to 80 mm on the windward side and over forecast by ~25-50 mm on the leeward side of the Olympic Mountains and in NW California/SW Oregon.

Summary by C. Hecht 3 PM PT Wed 09 Nov. 2016
The Second AR was associated with lower IWV flux and produced 2.64 inches of rain in 48 hours totaling 5.21 inches over both events with the majority of precipitation occurring over two 12-hour periods.

The first AR was had larger IVT at Forks, WA and dropped 2.57 inches of rain in 48 hours.

Both periods of heavy precipitation at Forks, WA are associated with decreasing freezing levels followed by a large decrease in wind speeds, indicating precipitation was most likely associated with a cold frontal passage.

Summary by C. Hecht 3 PM PT Wed 09 Nov. 2016