OLYMPEX

The Olympics Measurement Experiment (OLYMPEX) is a Ground Validation (GV) field campaign for the validation and verification of precipitation measurements by GPM to be conducted from Nov. 2015 through Feb. 2016 on the Olympic Peninsula. It is situated within an active mid-latitude winter storm track and reliably receives over 2500 mm of annual precipitation. In one compact area, the Olympic Peninsula ranges from ocean to coast to high terrain making it an ideal location for a GV field campaign.

OLYMPEX: Ground Validation Field Campaign Fall 2015/Winter 2016 on the Olympic Peninsula
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Field Campaign Overview

- OLYMPEX regions include ocean, windward side, high terrain and leeside and the Quinault and Chehalis river basins.
- NPOL radar on coast samples ocean and windward side, supported by a ground network of disdrometers, rain gauges and smaller radars
- Seasonal accumulation of the snowpack from SNOTEL and snow cameras
- Canadian X-band radar on Vancouver samples the leeside, supported by disdrometers and rain gauges
- Raingauge network in Chehalis river basin
- Aircraft measurements by DC-8 and Citation over all regions
- Environmental characteristics documented by dropsondes (DC-8) and rawinsondes at ULI, NPOL and X-band locations
- High resolution modeling(up to 1.3 km) over entire region

Rain Measurements

- Rain measurements will be made with rain gauge networks and disdrometers at a variety of elevations in the Quinault and Chehalis river basins.
- Results from early installation at Quinault Fisheries reveal variations in microphysical characteristics in prefrontal and postfrontal regimes for a weak frontal cyclone that occurred 27 – 28 March 2015
- In prefrontal sector, there were very small drops that formed in a warm saturated layer, similar to those described by White et al. (2003)
- Frontal and postfrontal sectors have a broader dropsize spectrum.

Snow Measurements

- Snowpack measurements using SNOTEL sites and snow camera network
- Microphysical measurements at high altitude stations at Hurricane Ridge (elevation > 5000') and Neilton Point (elevation > 2000')
- Remote installations of Parsivel and Pluvio powered by bank of batteries and solar panels at Wynoochee Trailer site and Upper Quinault

Hydrology and Modeling

- The Quinault and the Chehalis basins will be the focus for hydrological response
- The Quinault is a narrow basin affected by both snow in the higher elevations and rain and in the lower elevations. The Chehalis is primarily a rain-driven hydrological basin
- The Chehalis will have a large network of a variety of gauges, from dual-tipping buckets to RAWS to CoCoRaHS sites
- High resolution numerical models will be used for operations support and for hydrological studies