

Scatterometer Representations of Wind Fields in the Coastal Ocean  
Along the U. S. West Coast

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On this poster, winds from open-ocean and coastal buoys (10-20 km from the coast) are compared to scatterometer winds: QuikSCAT versions 2 & 3, ASCAT, and OSCAT. Principal axes ellipses for the buoys are overlain by similar ellipses for the scatterometers; vector correlations and RMS differences in speed are calculated between buoys and SCAT winds within 50 km of the buoys. Characteristic instantaneous fields are shown for QuikSCAT (Vers 2 vs Vers 3), ASCAT vs OSCAT. Unlike the open ocean (above), at coastal locations the land mask systematically removes vectors east of the buoy, creating offsets of 10-30 km between the centroid of the SCAT wind locations compared to the buoys, with widest (narrowest) land masks for ASCAT (OSCAT). Errors are more common in the vectors closest to the land for OSCAT, but examples of errors can be found for each of the scatterometers.

- In coastal locations, Version 3 QuikSCAT winds are smoother than Version 2 (they may be overly smooth in some cases). However, RMS differences are often larger for V3 than V2 and vector correlation values are not significantly different for the two QuikSCAT data sets.
- OSCAT fields are comparable to the other scatterometers. OSCAT recovers more vectors closer to the coast than ASCAT, with slightly lower correlations and slightly higher RMS differences than ASCAT for the coastal buoys.
- For all scatterometers, vector correlation values are generally lower and RMS differences are higher in coastal regions. The effect of spatial offsets in scatterometer vector locations need to be assessed, given the expected onshore-offshore gradients.
- Longer records covering all seasons more uniformly need to be assessed for OSCAT and ASCAT.

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