

4.3 An ultra-high resolution sailing forecast system for San Francisco Bay

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The San Francisco Bay is arguably one of the best places to sail in the world, with strong tidal current and a sea breeze in excess of 20 knots nearly every summer day. Cold, upwelled Pacific waters on the coast and hot temperatures in the Central Valley drive a strong sea breeze, amplified and steered by topographic features like the Golden Gate, Alcatraz Island, and Angel Island. Conversely, fickle wintertime winds often make even getting around the race course a challenge. Competitive sailors are able to utilize even small changes in wind speed and direction as a competitive advantage. We have created a 200-m resolution daily WRF wind forecasting system, including a unique visualization system relying on PostGIS and Geoserver to deliver just-in-time forecasts to sailors. The forecasts have been used to obtain a 1st place in every major race to date in 2014. This talk describes the WRF configuration and post-processing used to create the forecasts, in addition to wind field validation.