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Comparison between the moored ADCP currentmeter and HF radar current data in front of the Venetian Lagoon (Northern Adriatic Sea)

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A preliminary assessment of a two-sites shore-based HF radar network accuracy along the Venice Lagoon coastline is attempted by means of comparison with a 57.5 day-long ADCP current time series for the period September-October 2002. Results show that radar measurement are accurate (< 7 cm/s) 55% of the times since more than 55% of the U component differences (56% for the V component) are under 7 cm/s, and more than 50% of direction differences are under 35°. The main differences between the HF radar and surface ADCP currents can be explained in terms of random errors affecting the measurement technique, since low-pass current time series significantly improves the correlation and decreases the RMS of the differences between estimates. Comparison of the semidiurnal (M2, S2) tidal band suggests good agreement between tidal ellipse amplitudes. Wind forcing on a daily time-scale (sea-breeze) is associated with larger differences between radar and ADCP currents at a diurnal band due to the presence of a vertical shear in the surface layer.