Supplement of

Synoptic scale variability of surface winds and ocean response to atmospheric forcing in the eastern Austral Pacific Ocean

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Supplement material

Introduction

The supplementary figures include the comparison of surface wind data components (u and v) from a buoy and different navy lighthouses (NLH) located on the coast of Patagonia, with satellites wind product, ASCAT and QuikSCAT, and the ERA5 reanalysis climate data set (Figs. S1, S2, S3, S4 and S5). The period from 2017-2018 was used for the analysis between buoy and ERA5, and the years 2009–2011 and 2014 were used in case of NLH wind data. In order to quantify the statistical relationship between the data sets, a Taylor diagram (Taylor, 2001) was applied.

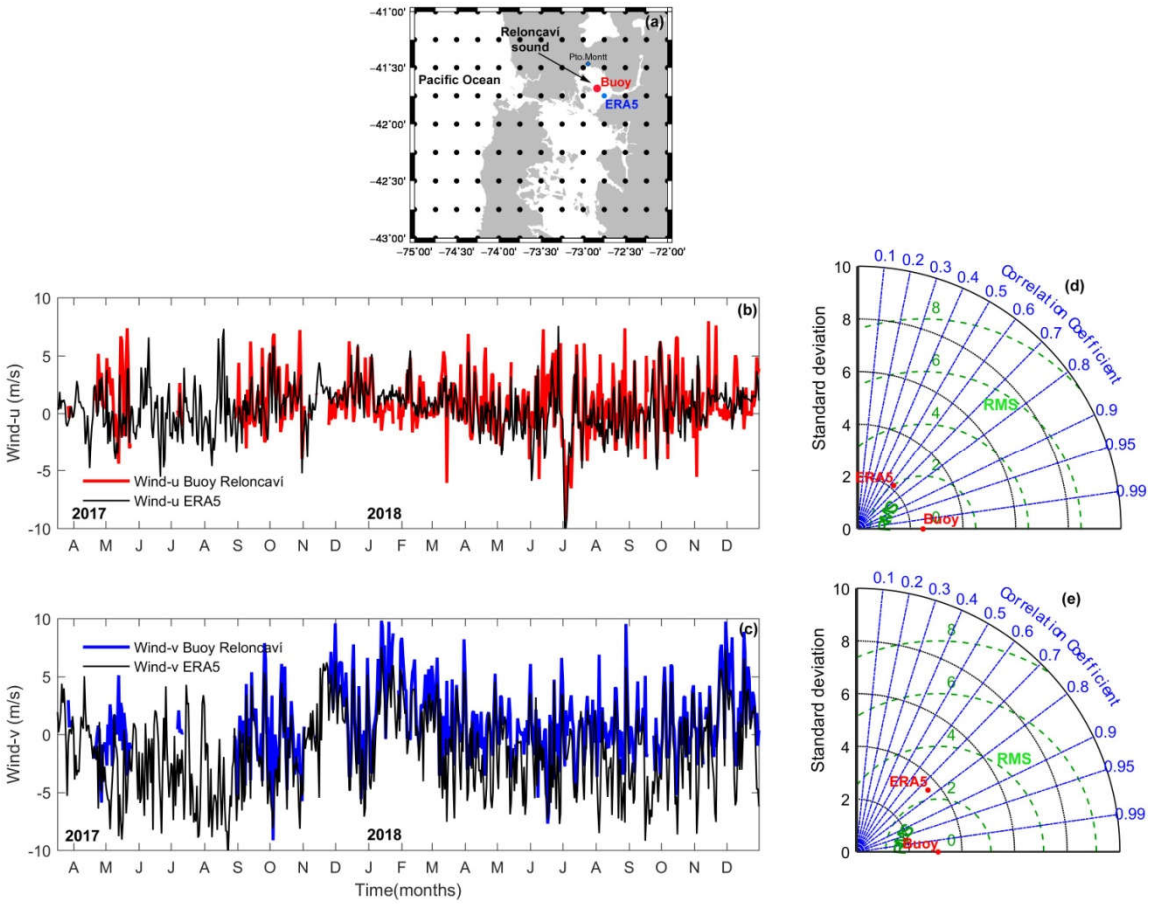

Figure S1. (**a**) Map showing the grid data from ERA5 reanalysis (black dots) and the position of the oceanographic buoy moored in Reloncaví sound. (**b** and **c**) Time series of the wind components u and v, and (**d** and **e**) Taylor diagrams correlating wind data from the Buoy with the ERA5 reanalysis. In (**d** and **e**) the blue lines represent the correlation coefficient, the green lines the root mean square error and the black lines the standard deviation.

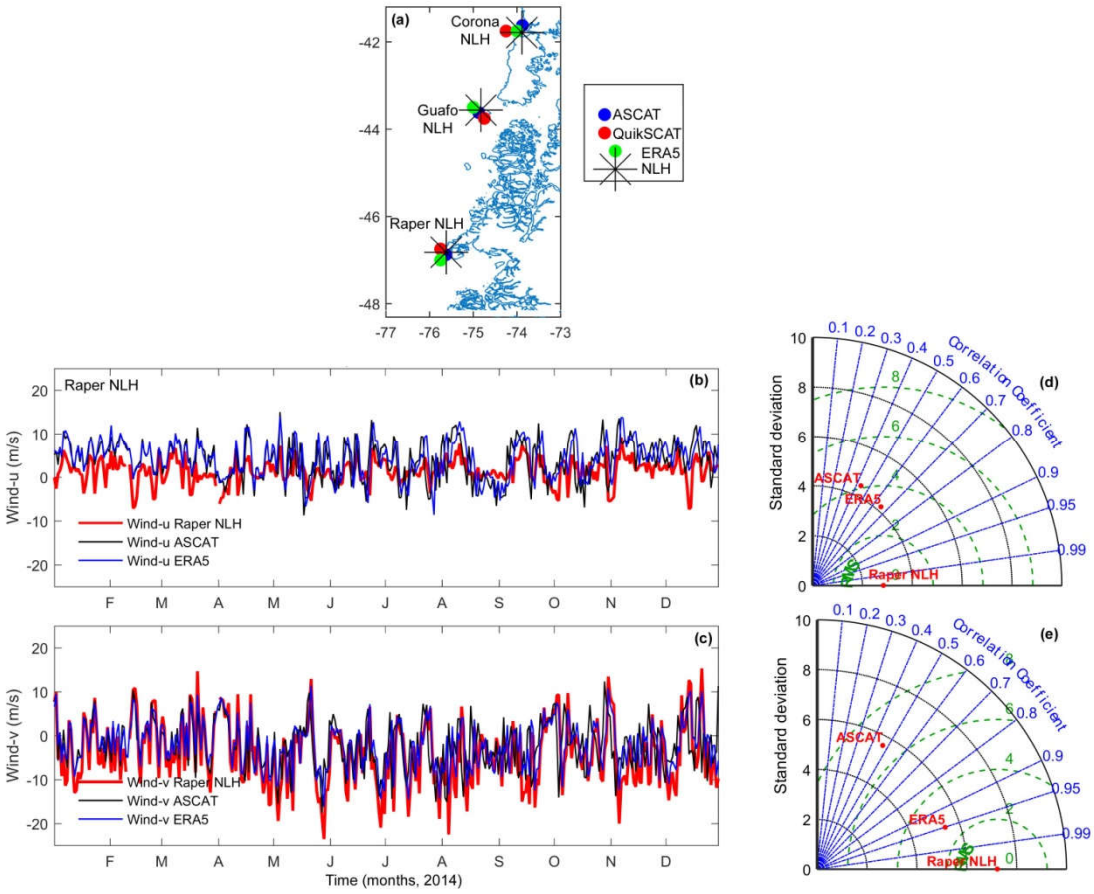

Figure S2. (**a**) Map showing the positions of the different navy lighthouses (NLH), the ASCAT satellite wind product and the ERA5 reanalysis grid points closest to the NLH. (**b** and **c**) Time series of wind components u and v, and (**d** and **e**) Taylor diagrams correlating wind data from Raper NLH with the ASCAT and ERA5 reanalysis. In (**d** and **e**) the blue lines represent the correlation coefficient, the green lines the root mean square error and the black lines the standard deviation.

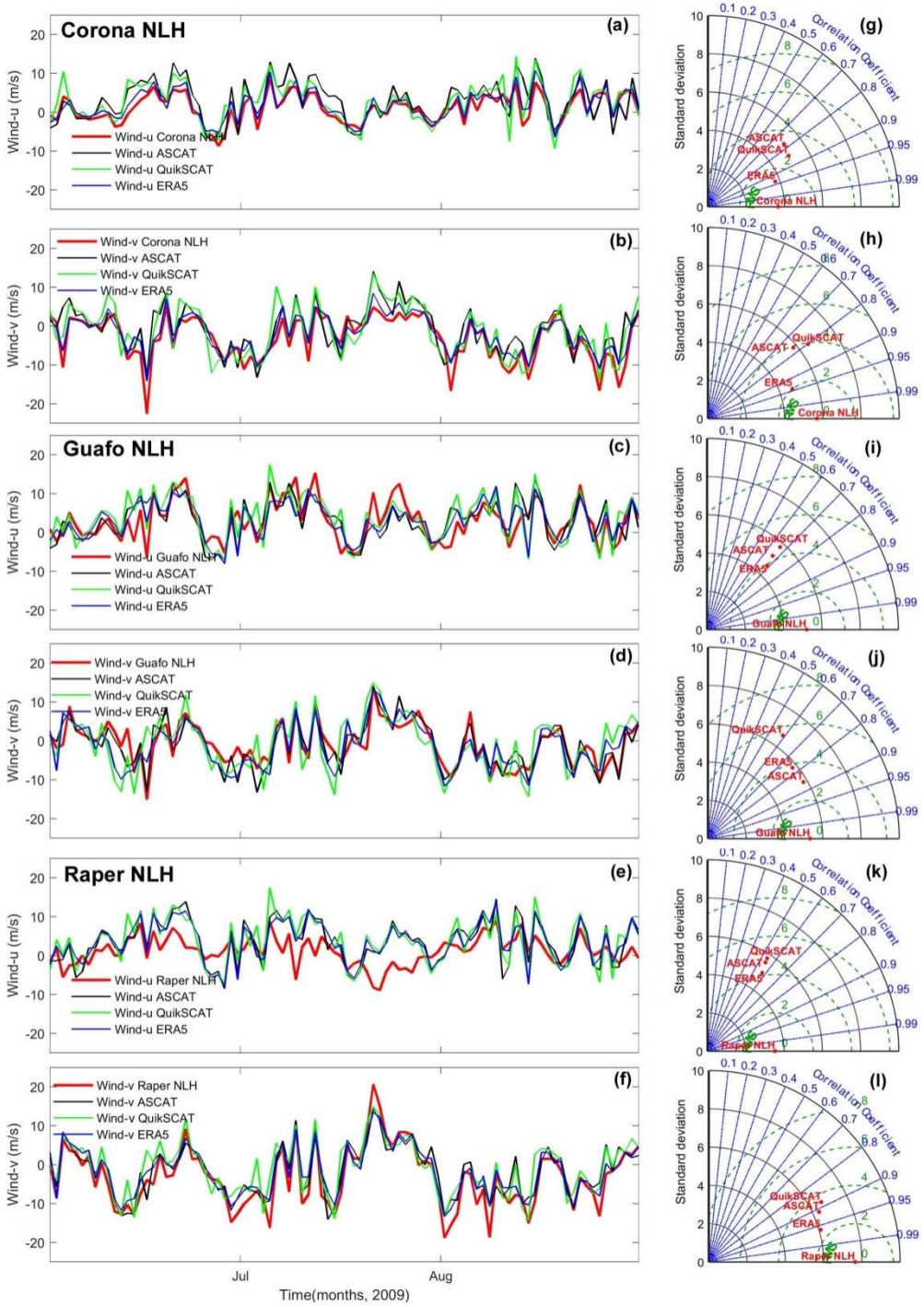

Figure S3. (**a–f**) Time series of wind components u and v from different NLH with the satellite wind products (ASCAT and QuikSCAT) and ERA5 reanalysis. (**g**–**l**) Taylor diagrams in which blue lines represent the correlation coefficient, the green lines the root mean square error and the black lines the standard deviation.

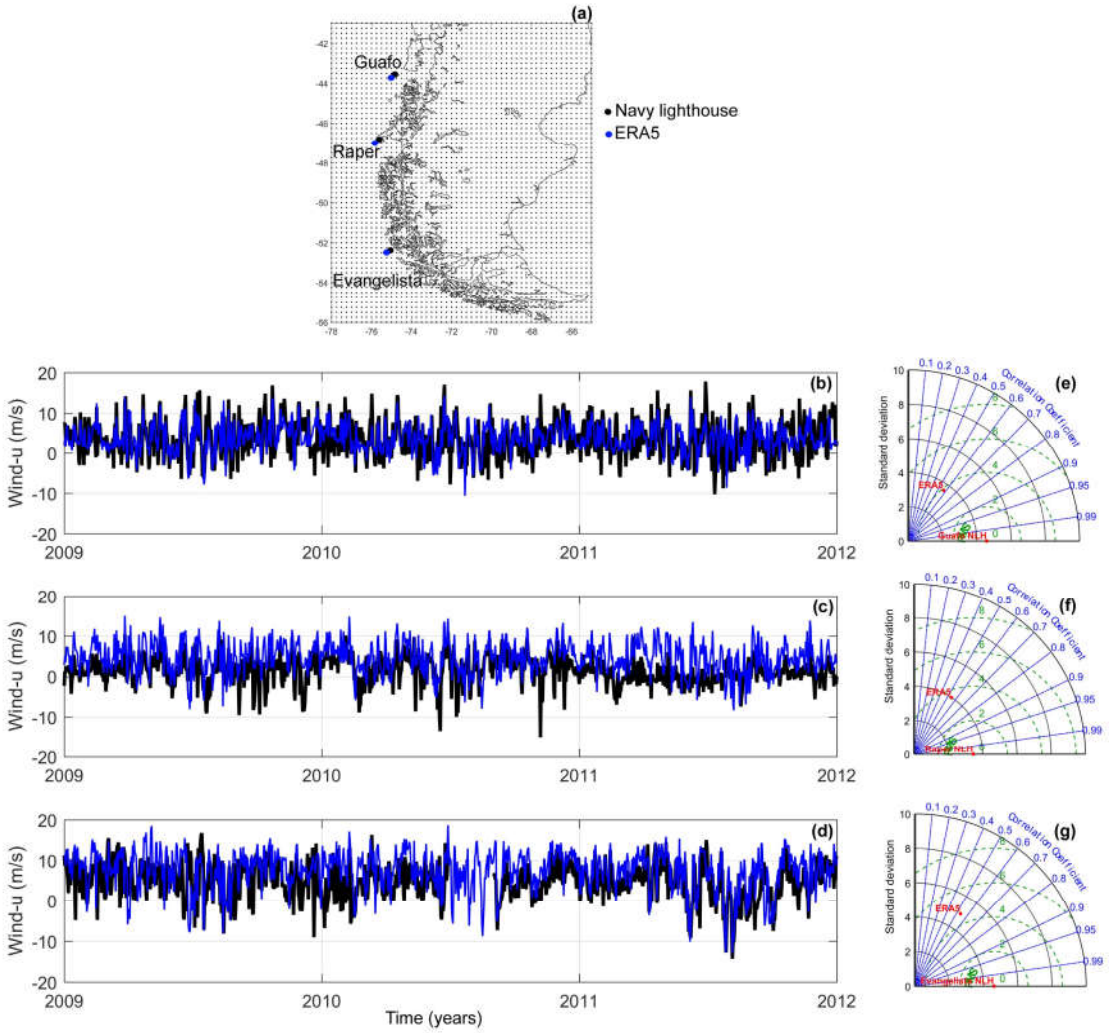

Figure S4. (**a**) Map showing the positions of the different NLH and the ERA5 reanalysis grid points closest to the NLH. (**b–d**) Time series of wind components u from different NLH and the ERA5 reanalysis. (**e**–**g**) Taylor diagrams in which blue lines represent the correlation coefficient, the green lines the root mean square error and the black lines the standard deviation.

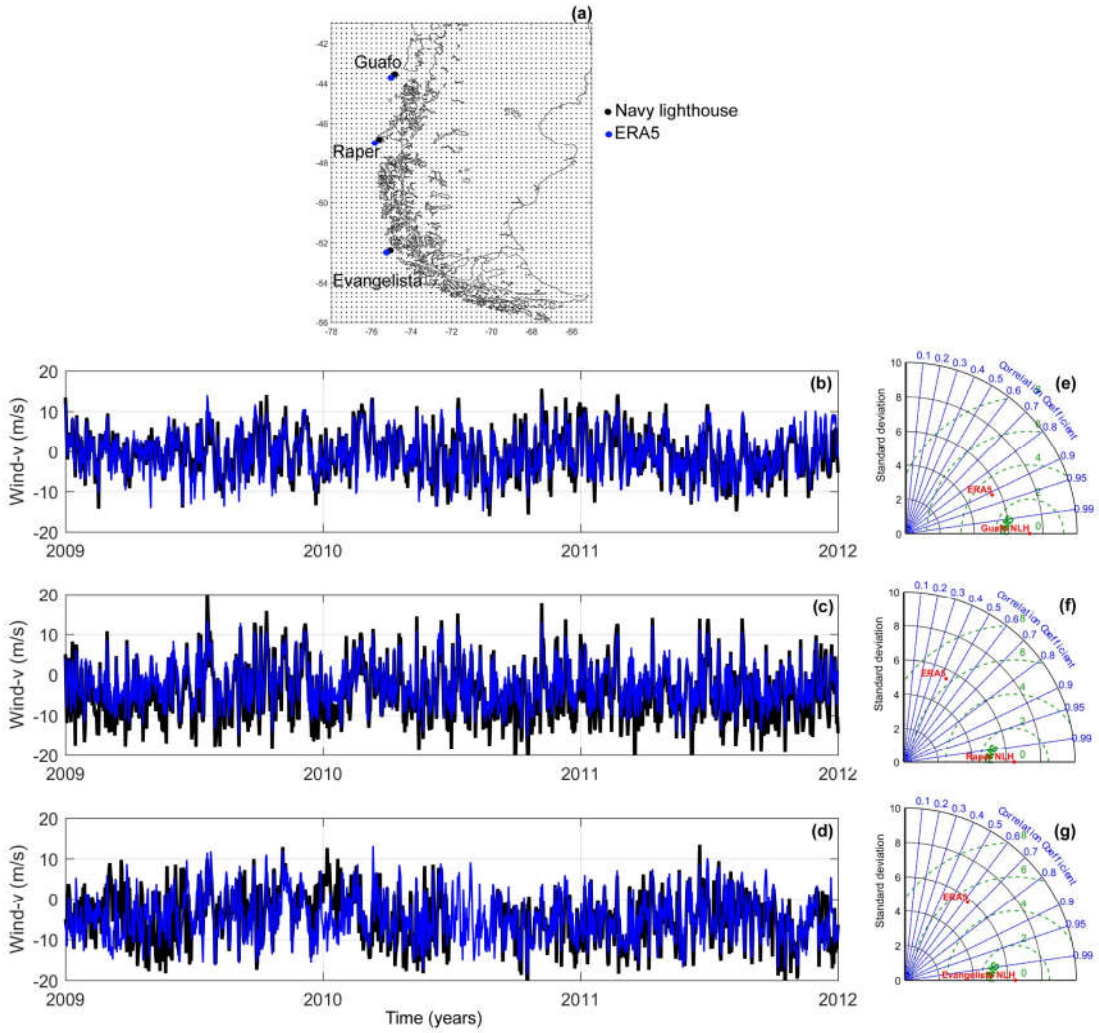

Figure S5. (**a**) Map showing the positions of the different NLH and the ERA5 reanalysis grid points closest to the NLH. (**b–d**) Time series of wind components v from different NLH and the ERA5 reanalysis. (**e**–**g**) Taylor diagrams in which blue lines represent the correlation coefficient, the green lines the root mean square error and the black lines the standard deviation.

Reference

Taylor, K. E.: Summarizing multiple aspects of model performance in a single diagram, J. Geophys. Res., 106, 7183–7192, doi:10.1029/592 2000JD900719, 2001.