Supplementary material
for

Influence of oceanic intraseasonal Kelvin waves on the Eastern Pacific hurricane activity

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Figures S1 to S7

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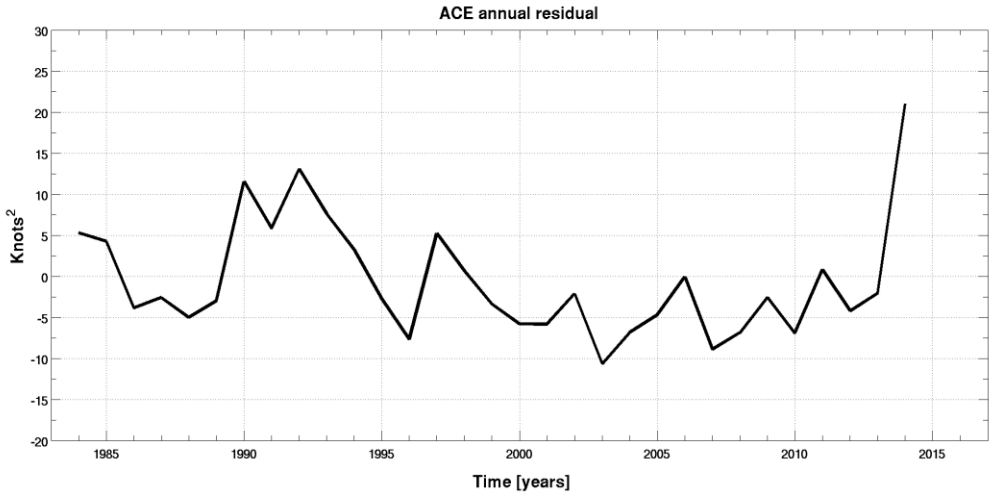

Figure S1. Time series of the ACE annual residual:
Residual = $ACE \;/\; TCI_{@\ May-Nov} - aNino\ 3.4_{@\ May-Nov} - bTsub_{@\ May-Nov}$
See Section 2 of the manuscript for mode details.

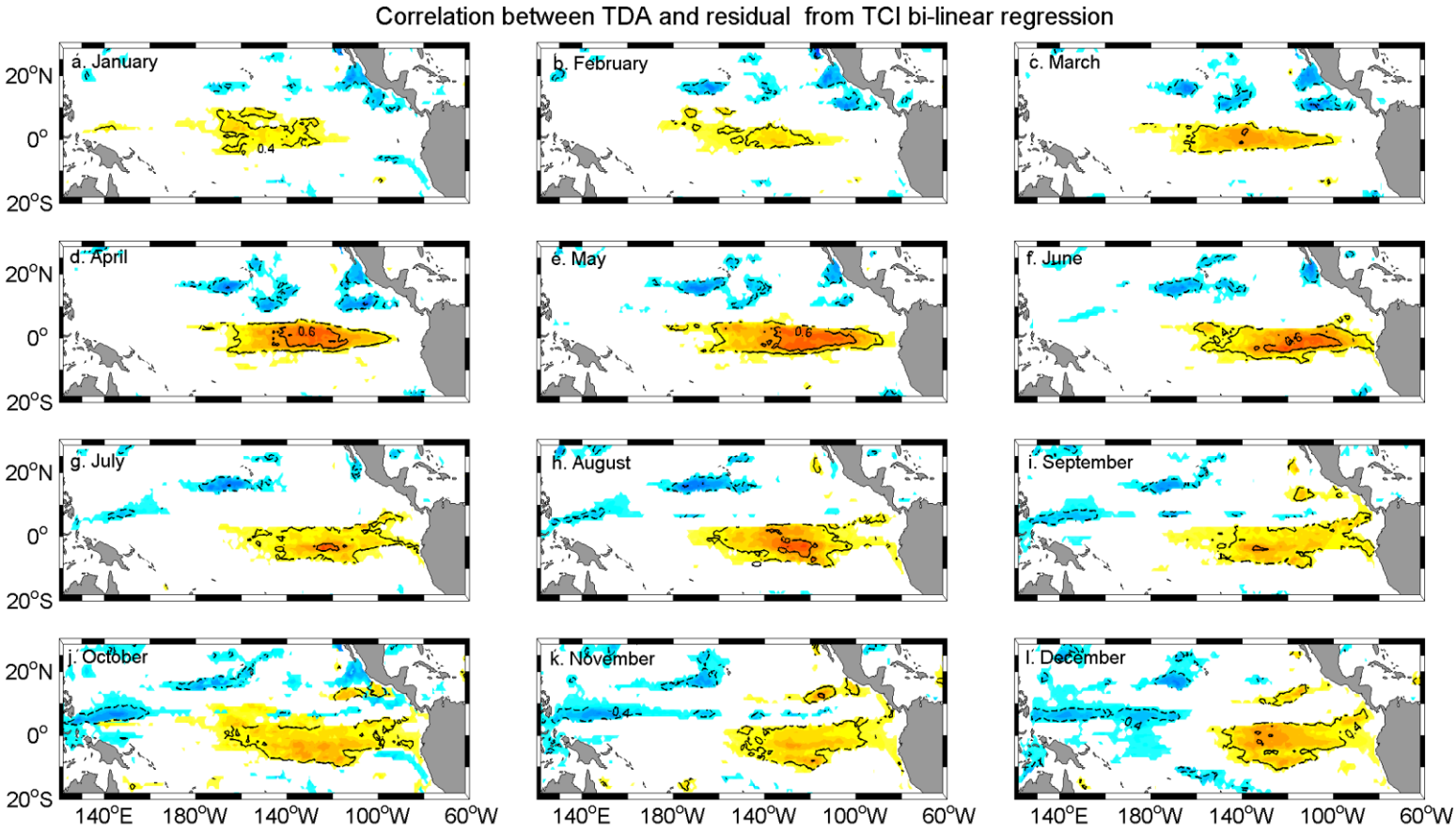

Figure S2. Significant correlations at the 93% confidence level between annual anomalies of thermocline depth for each calendar month (January (a) to December (l)) and the annual residual from the Tropical Cyclone Intensity (TCI) bi-linear regression onto Nino3.4 and Tsub (monthly anomalies averaged in region TC; 160°W-90°W; 5°N-25°N (indicated by the black box in manuscript's Figure 1a); 5-80m and during the boreal hurricane season, i.e. May to November). Contours are 0.2.

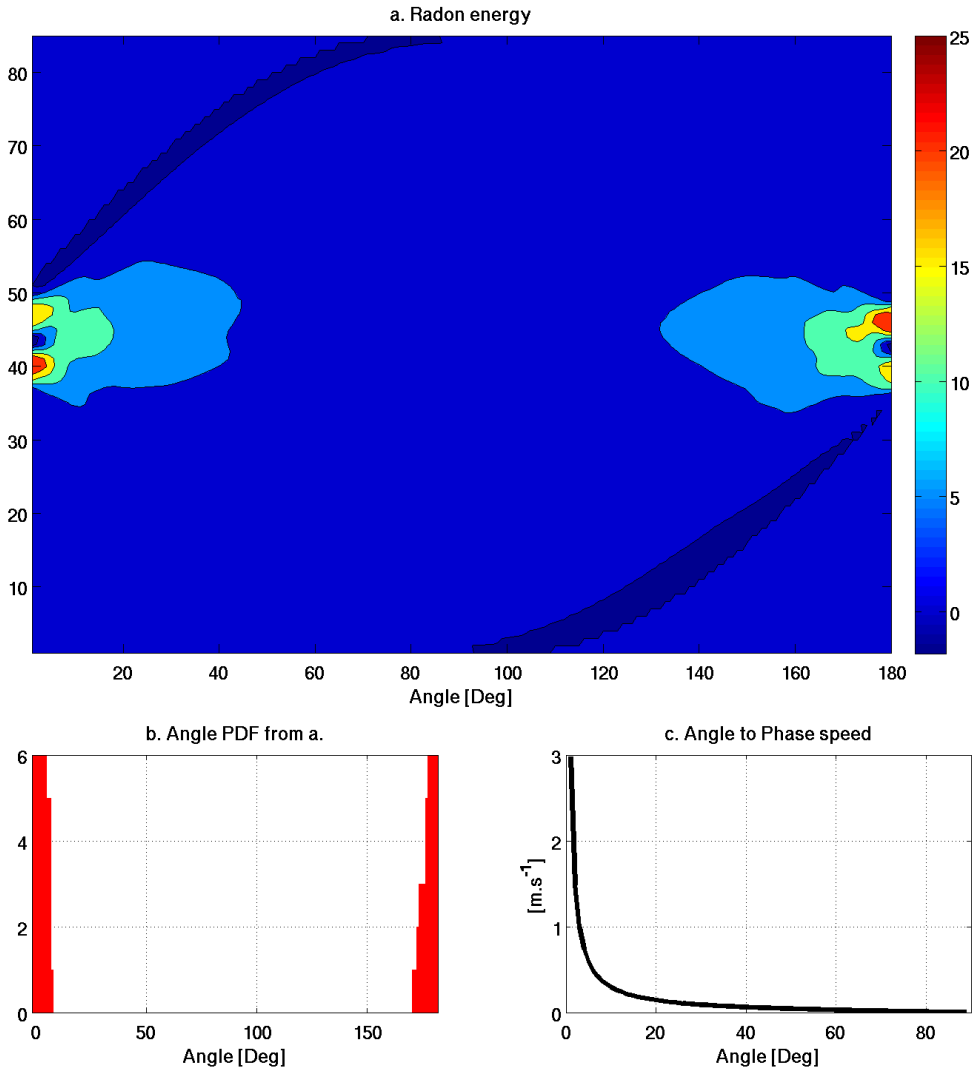

Figure S3. Radon transform of Figure 4a (a). Probability Density Function (PDF) of angles that exhibit values of Radon energy above 65% of the Radon energy maximum (b). Relationship between propagation phase speed and angles (c).

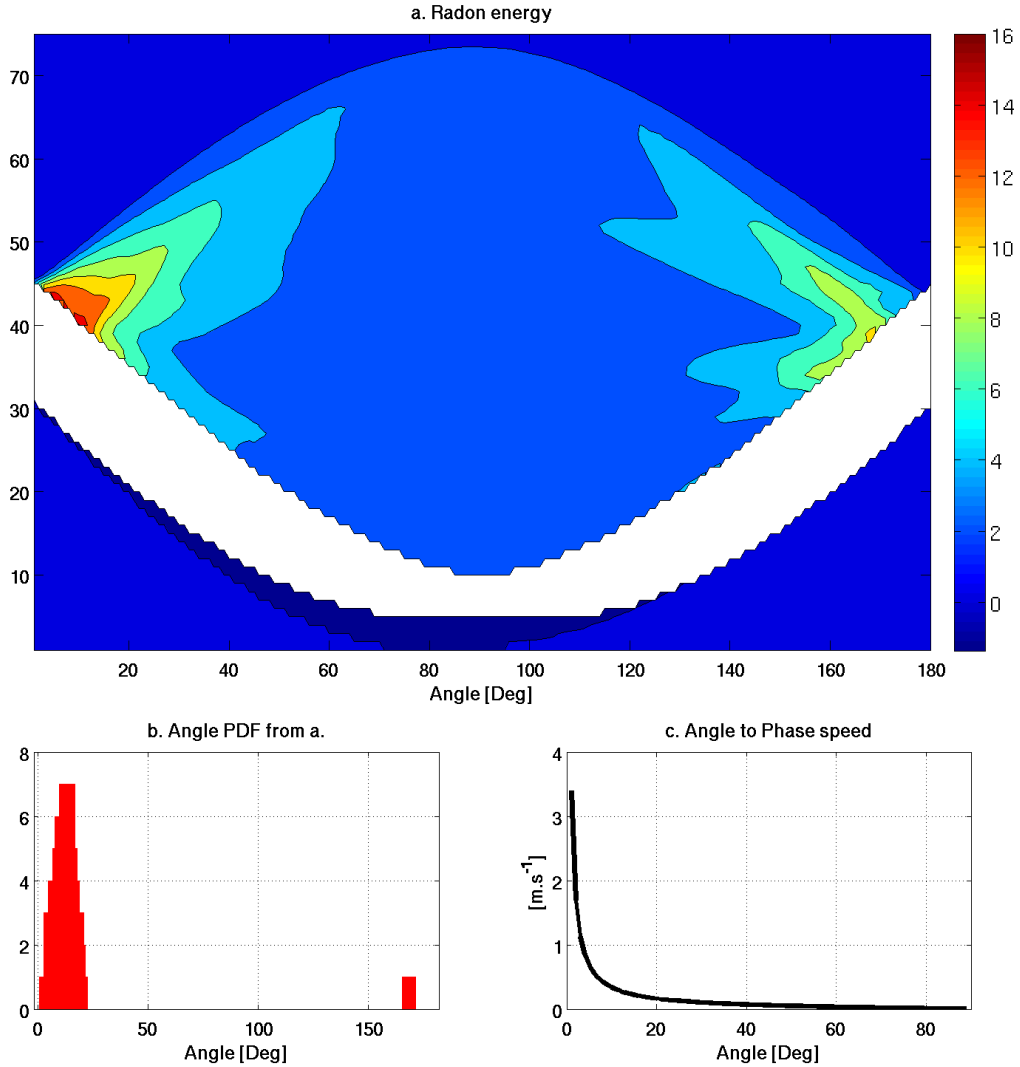

Figure S4. Radon transform of Figure 4b (a). Probability Density Function (PDF) of angles that exhibit values of Radon energy above 65% of the Radon energy maximum (b). Relationship between propagation phase speed and angles (c).

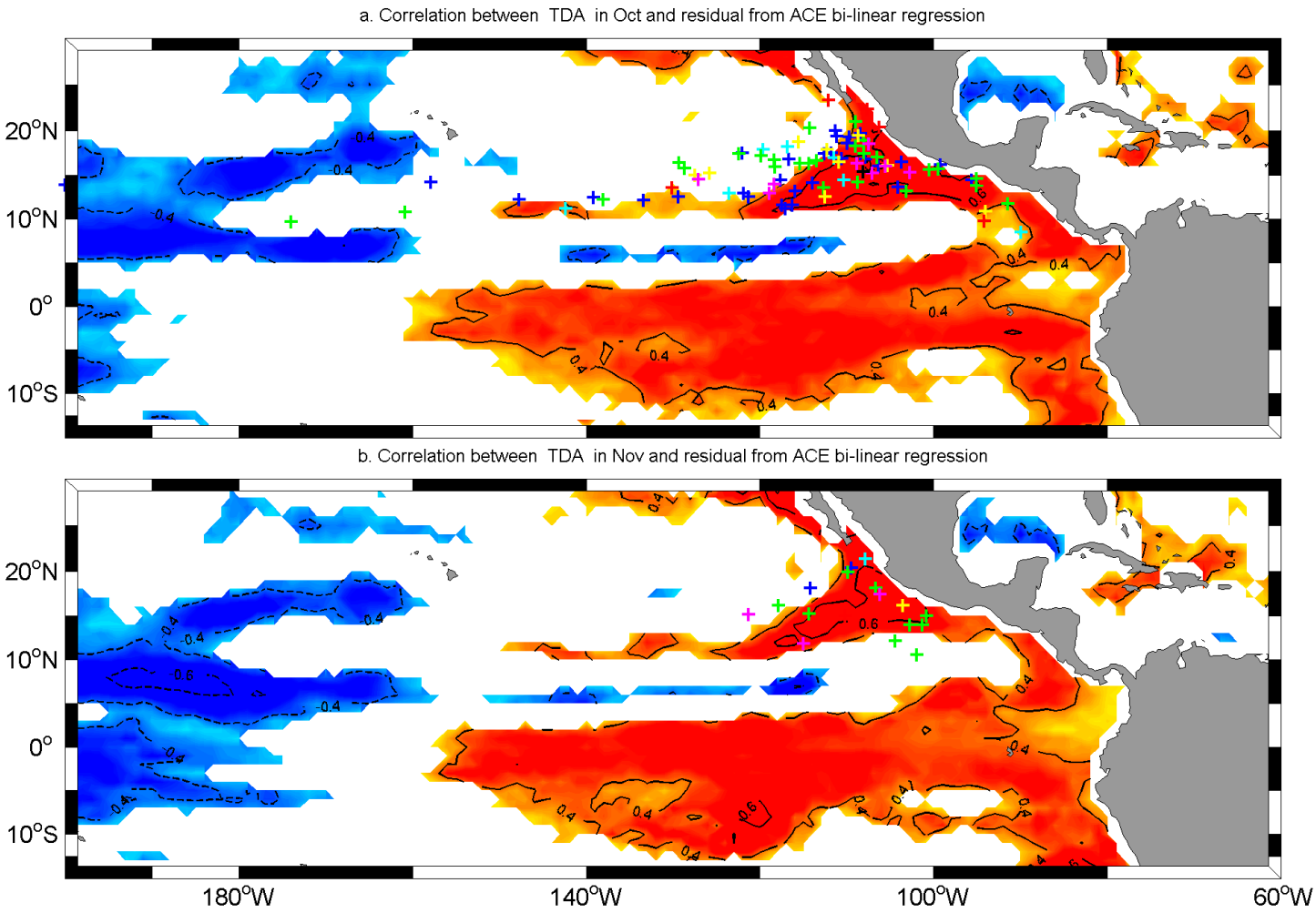

Figure S5. Significant correlations at the 90% confidence level between annual anomalies of thermocline depth for different months (October (a) and November (b)) and the annual residual from the ACE bi-linear regression onto Nino3.4 and Tsub. Contours are 0.2, with a thick black 0-line. The colored crosses represent the location of the strongest intensification (i.e., the location of maximum increase in wind speed) of every storm that occurred during the corresponding months; for instance, in (b), the crosses stand for the maximum intensification location of all TC that occurred in November between 1984 and 2014. Tropical Depressions are in dark blue, Tropical storms in cyan, Category 1 in green, Category 2 in yellow, Category 3 in red, Category 4 in magenta and Category 5 in black.

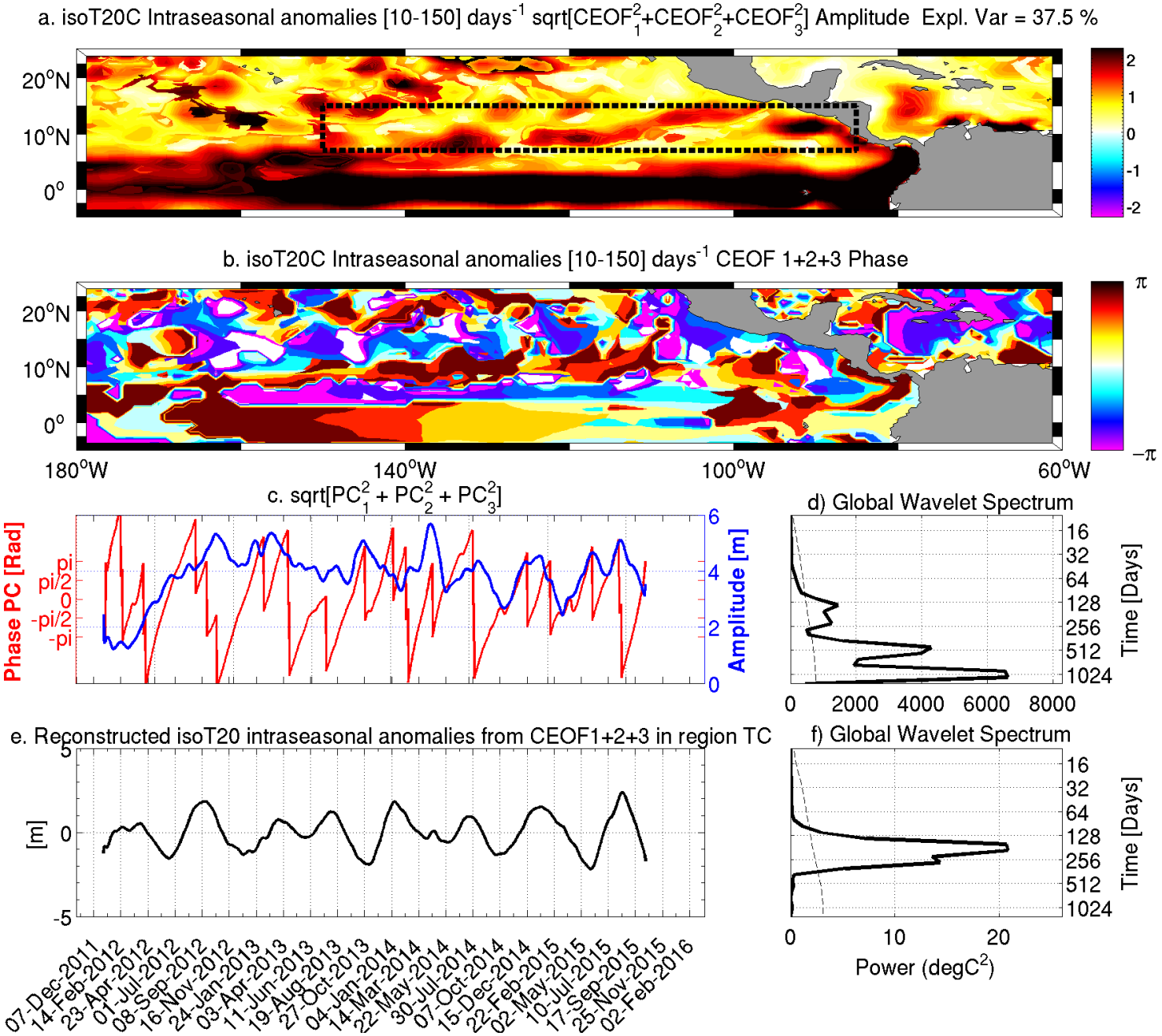

Figure S6. First three modes of the decomposition into Complex Empirical Orthogonal Functions (CEOF) of intraseasonal (band pass filtered between 10 and 150 days) anomalies of isotherms 20C. Amplitude, *sqrt(PC1^2 + PC2^2 + PC3^2)* (a.) and phase (b.) of CEOF1+2+3 spatial pattern. Time series of *sqrt(PC1^2 + PC2^2 + PC3^2)* is shown in (c.), in blue and the phase of *PC1+PC2+PC3* in red. The global wavelet spectrum of *sqrt(PC1^2 + PC2^2 + PC3^2)* is shown in (d.). Panel (e.) represents the time series of the intra seasonal anomalies of the isotherm 20ºC averaged in region TC (delineated by the thick dashed line in (a)) and reconstructed from the first three CEOF modes. The results are presented for the central to eastern Northern Pacific but the CEOF decomposition is performed over the entire tropical Pacific (120°E-60°W; 25°N-25°S).

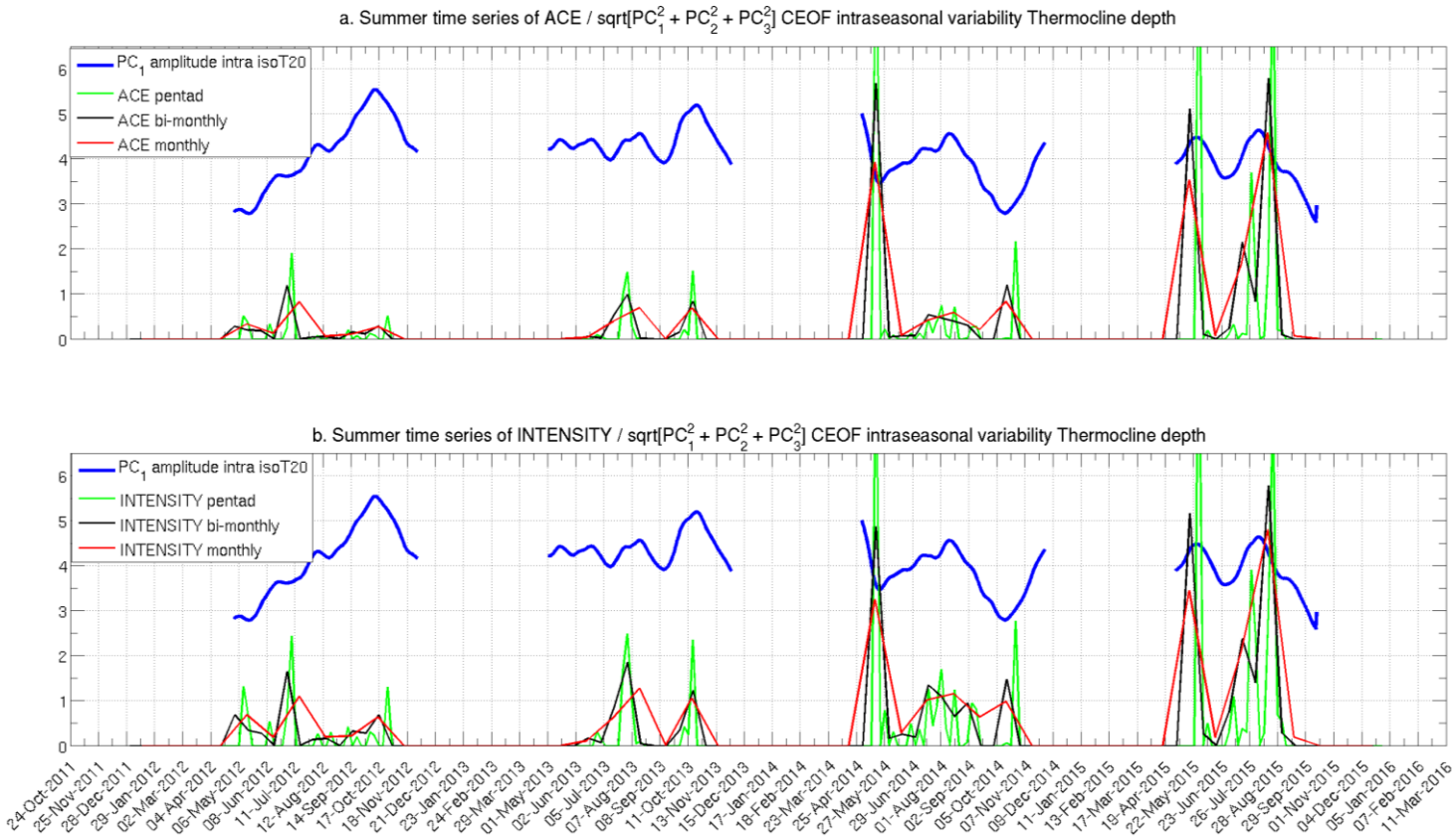

Figure S7. Hurricane season (May-November) time series of the standardized Accumulated Cyclone Energy (ACE, panel a) and Tropical Cyclone Intensity (TCI, panel b) averaged in the same region as Figure 6e at different temporal resolution (5-days average in green, 2-weeks average in black and monthly average in red) and hurricane season time series, *sqrt(PC1^2 + PC2^2 + PC3^2)*, of the Principal Component (PC) amplitude from the first three CEOF modes of intraseasonal TDA (thick blue) for the period January 1st 2012 until October 13th 2015.