



AMS
American Meteorological Society

Supplemental Material

[© Copyright 2019 American Meteorological Society](#)

Permission to use figures, tables, and brief excerpts from this work in scientific and educational works is hereby granted provided that the source is acknowledged. Any use of material in this work that is determined to be “fair use” under Section 107 of the U.S. Copyright Act or that satisfies the conditions specified in Section 108 of the U.S. Copyright Act (17 USC §108) does not require the AMS’s permission. Republication, systematic reproduction, posting in electronic form, such as on a website or in a searchable database, or other uses of this material, except as exempted by the above statement, requires written permission or a license from the AMS. All AMS journals and monograph publications are registered with the Copyright Clearance Center (<http://www.copyright.com>). Questions about permission to use materials for which AMS holds the copyright can also be directed to permissions@ametsoc.org. Additional details are provided in the AMS Copyright Policy statement, available on the AMS website (<http://www.ametsoc.org/CopyrightInformation>).

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Supplemental Online Materials for
“What Controls the Duration of El Niño and La Niña Events?”

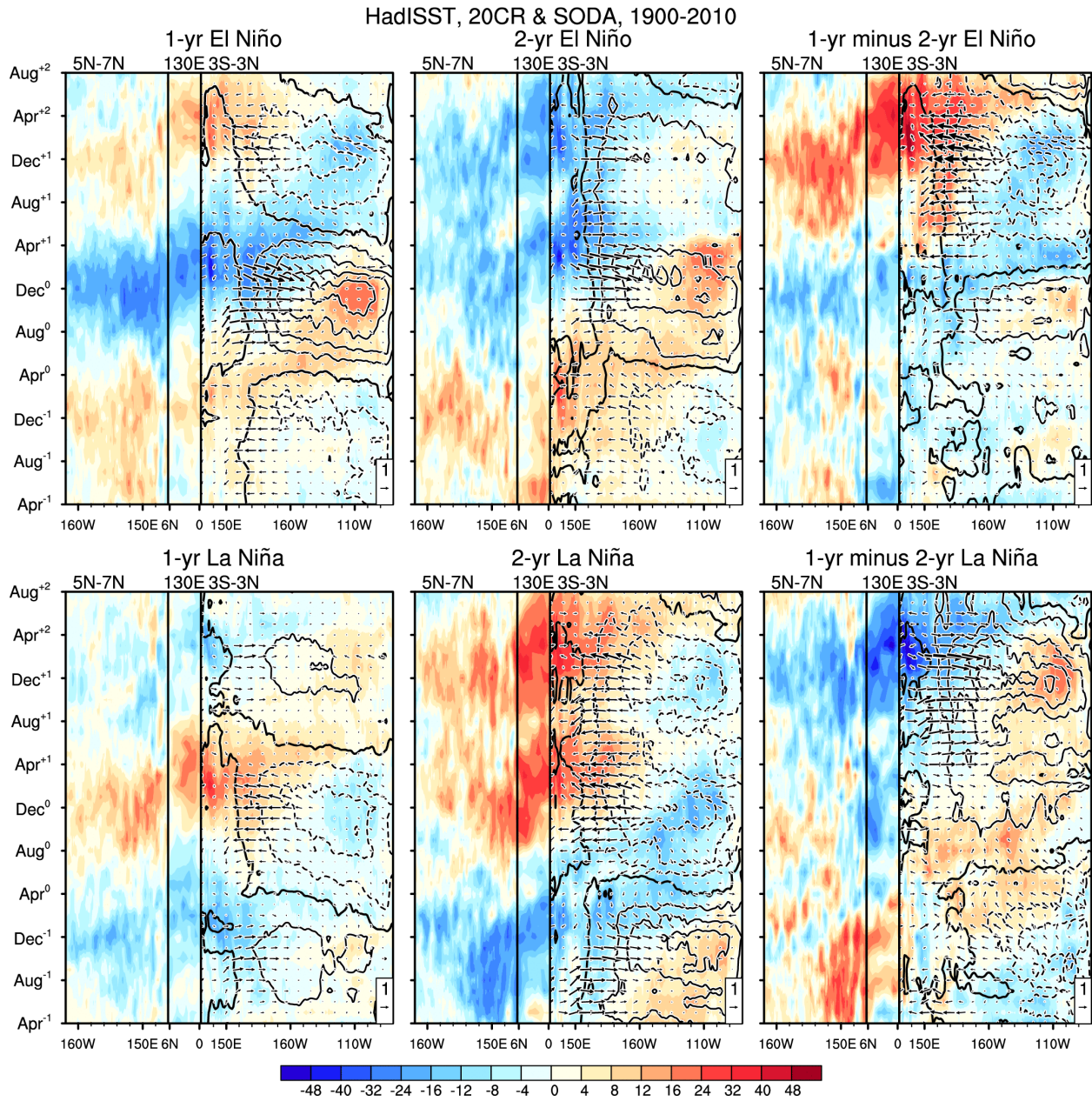
Xian Wu, Yuko M. Okumura, and Pedro N. DiNezio
Institute for Geophysics, Jackson School of Geosciences
The University of Texas at Austin, Austin, Texas

Journal of Climate

Submitted October 10, 2018

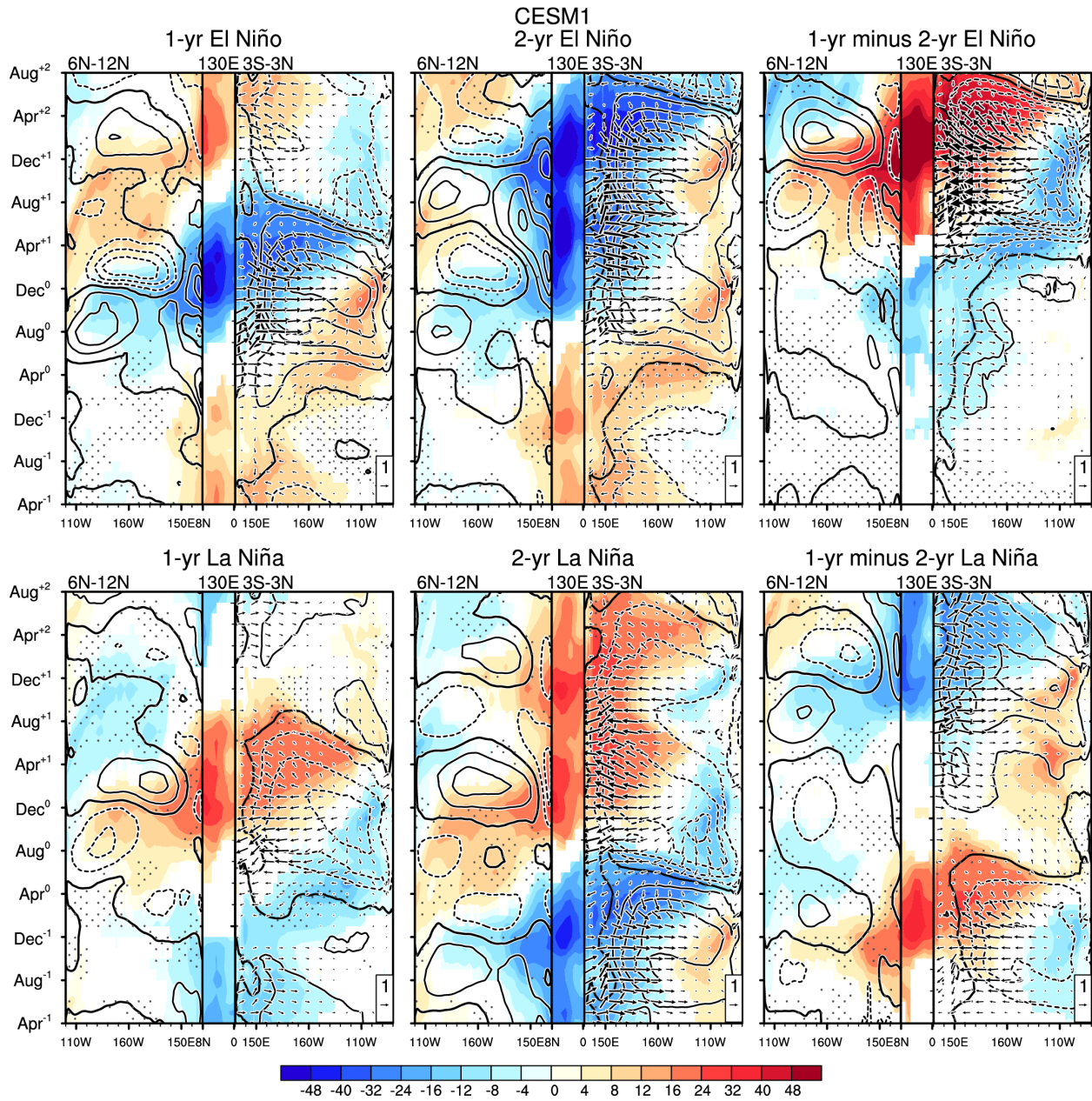
Revised March 2, 2019

Corresponding author address: Xian Wu, Institute for Geophysics, Jackson School of
Geosciences, The University of Texas at Austin, 10100 Burnet Road, Austin, TX 78758
Email: xianwu0403@utexas.edu



24

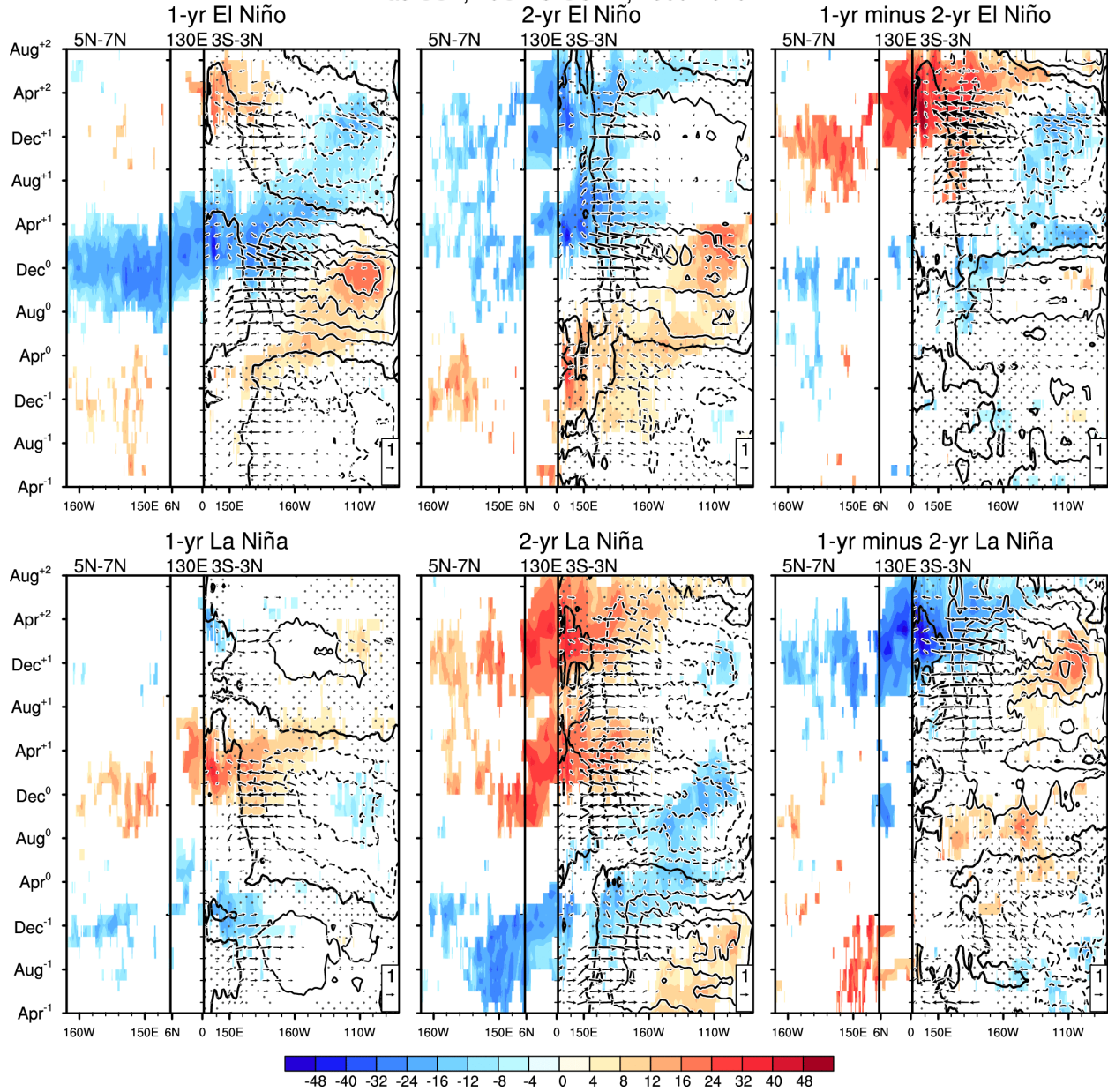
25 **Figure S1.** As in Fig. 4 but based on the SODA, HadISST, and 20CR datasets for 1900-2010 and
 26 the off-equatorial anomalies are averaged in 5°N–7°N. The statistical significance of these
 27 anomalies is shown in Fig. S2.



28

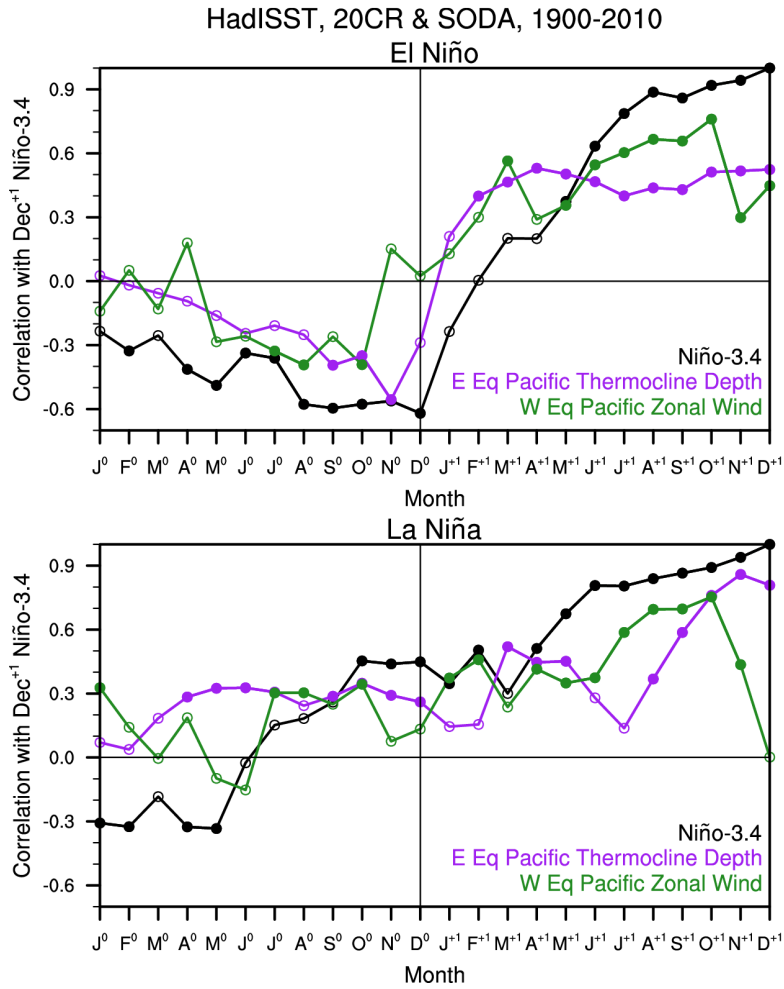
29 **Figure S2.** As in Figs. 4 and S1 but only thermocline (shading) and surface wind (vectors)
 30 anomalies statistically significant at the 98% (80%) confidence level are shown for CESM1
 31 (observation). SST and wind stress curl anomalies (contours) that are not statistically significant
 32 at the 98% (80%) confidence level are masked with gray stippling for CESM1 (observation).

HadISST, 20CR & SODA, 1900-2010



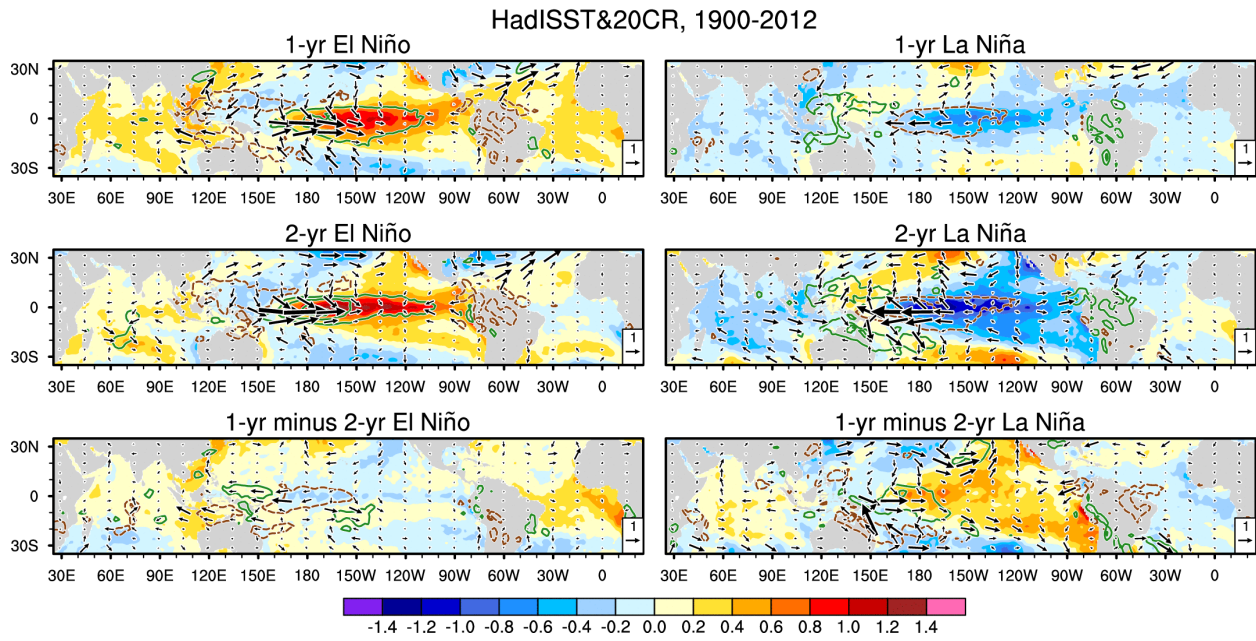
33

34 **Figure S2.** (Continued)



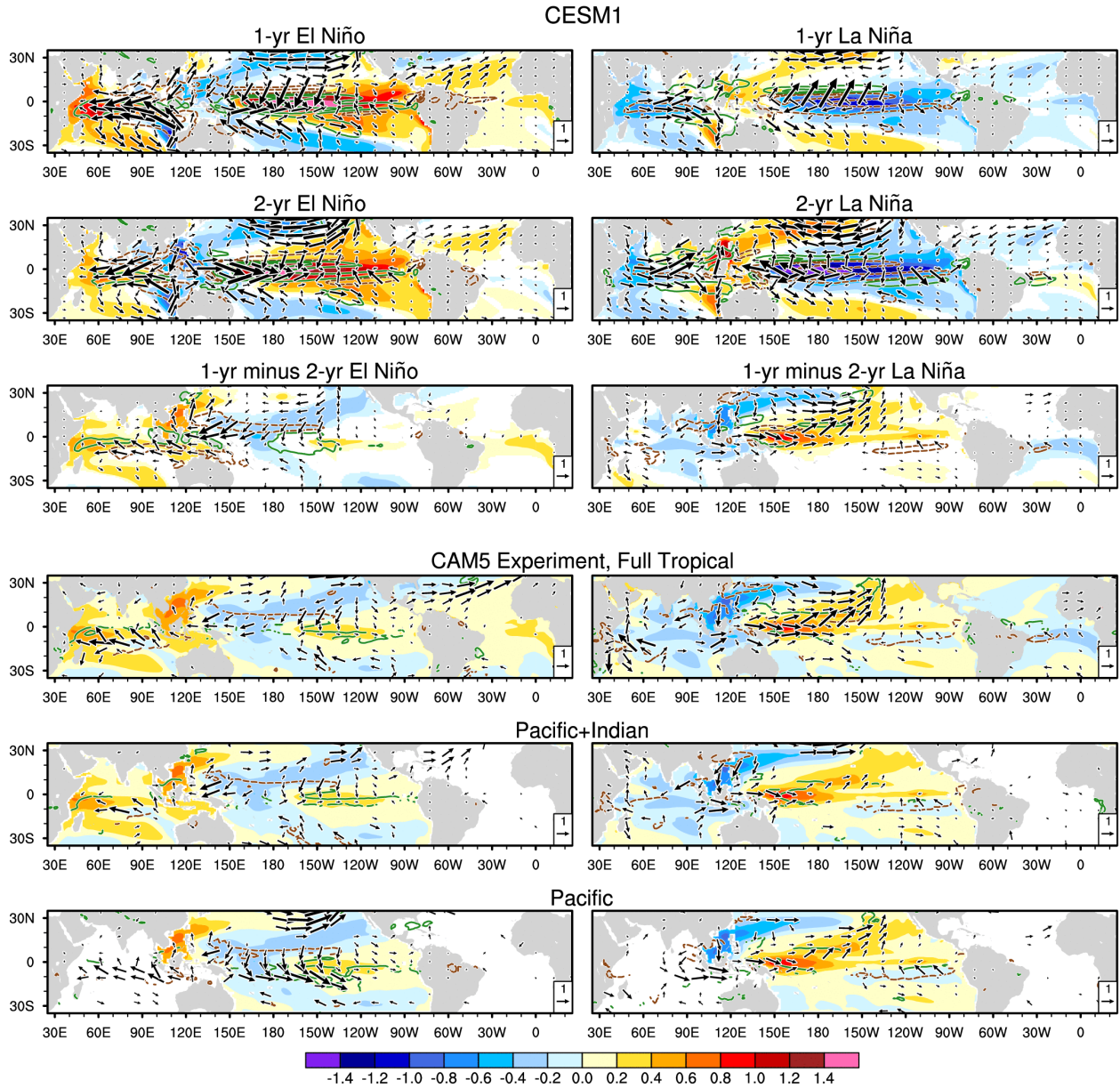
35

36 **Figure S3.** As in Fig. 5 but based on the SODA, HadISST, and 20CR datasets for 1900-2010. The
 37 closed circles indicate correlations statistically significant at the 80% confidence level.



38

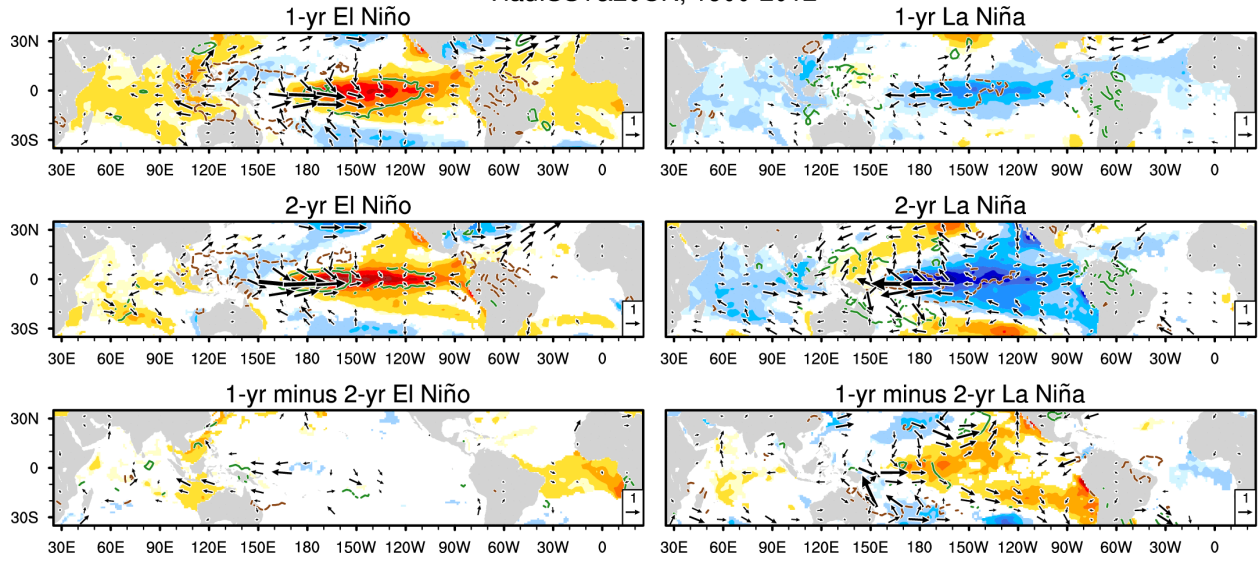
39 **Figure S4.** As in Figure 6 but based on the HadISST and 20CR datasets for 1900-2012.



40

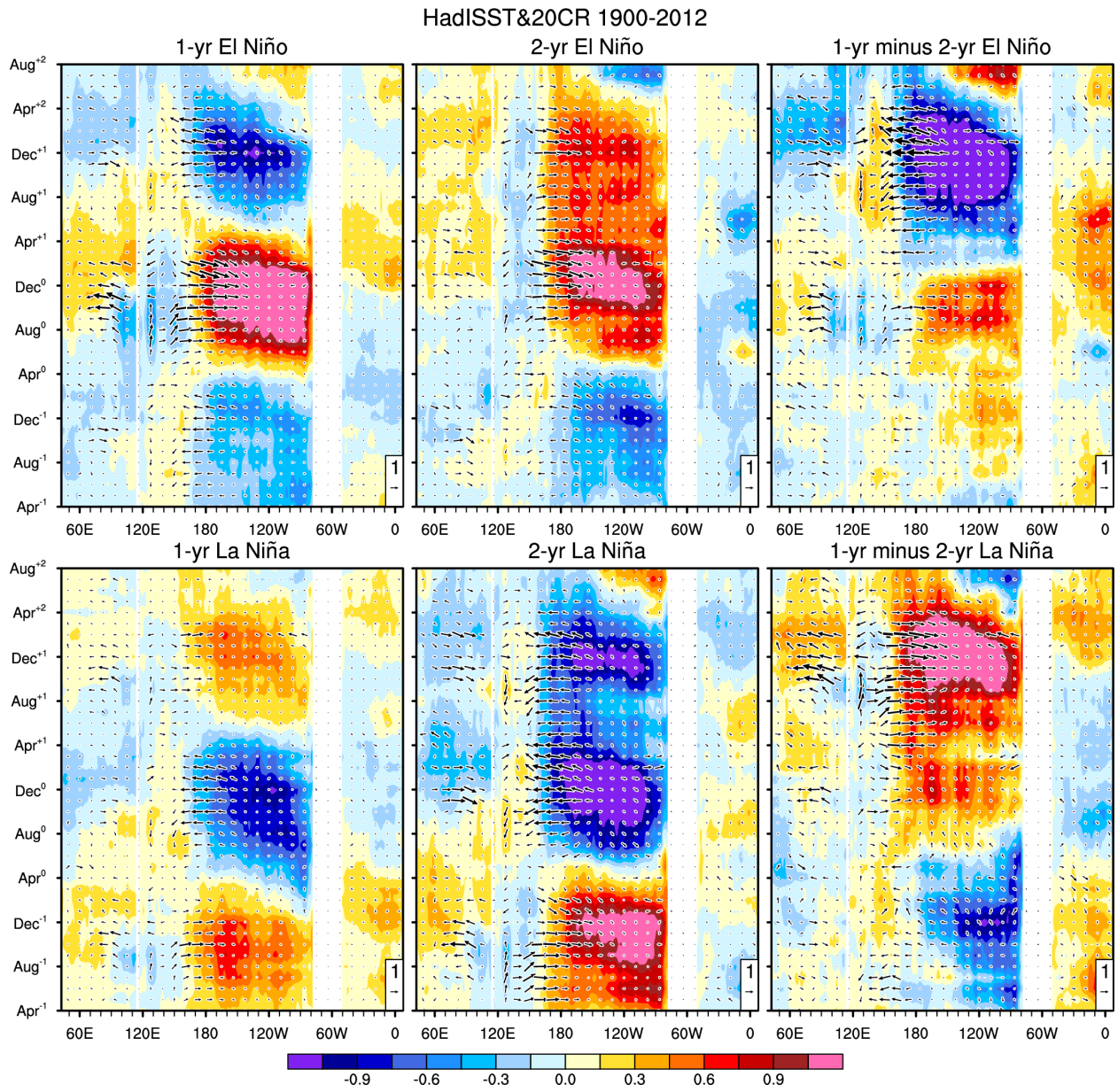
41 **Figure S5.** As in Figs. 6 and S4 but only anomalies statistically significant at the 98% (90%)
 42 confidence level are shown for CESM1 (CAM5 experiments and observation).

HadISST&20CR, 1900-2012



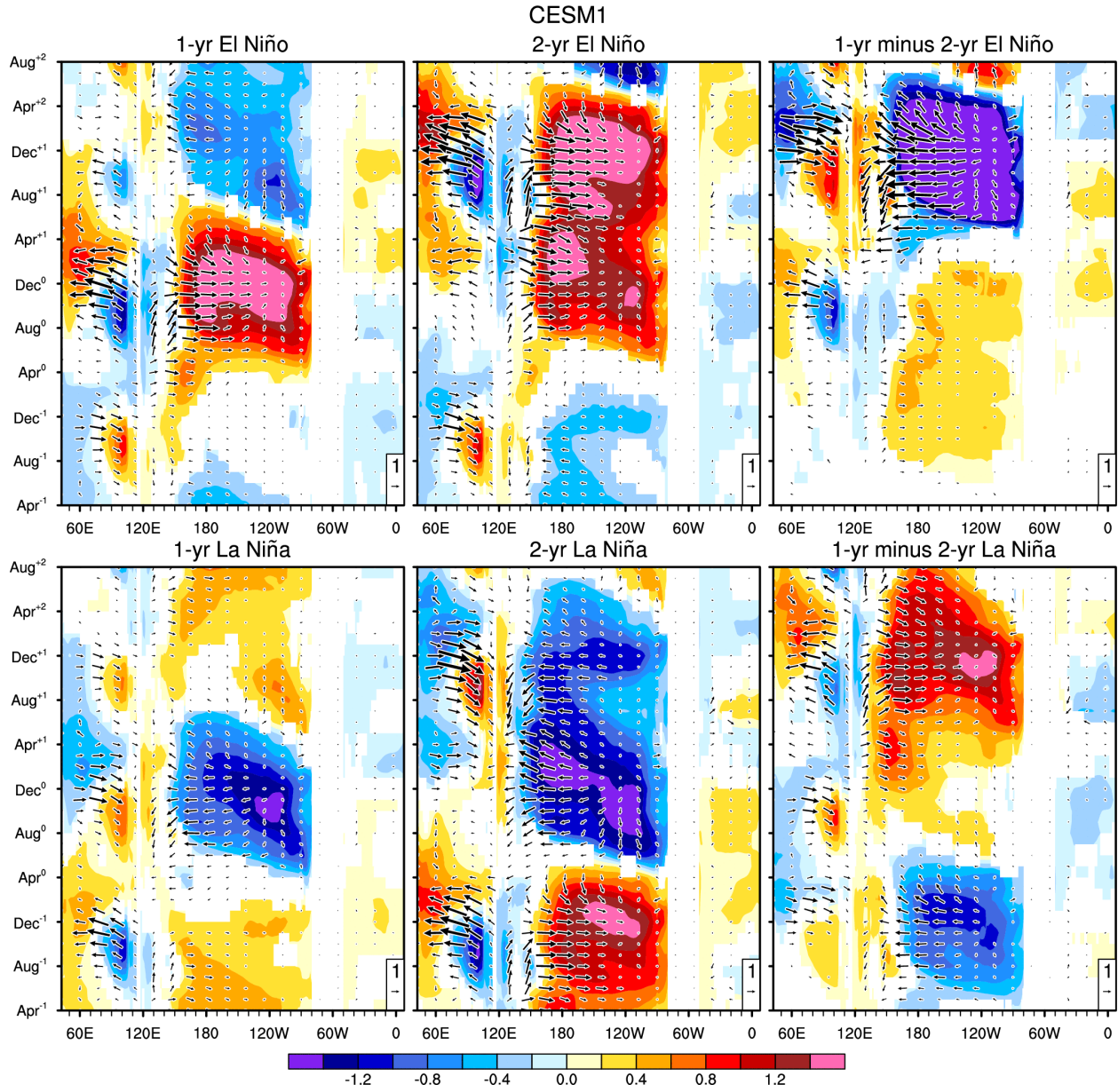
43

44 **Figure S5.** (Continued)



45

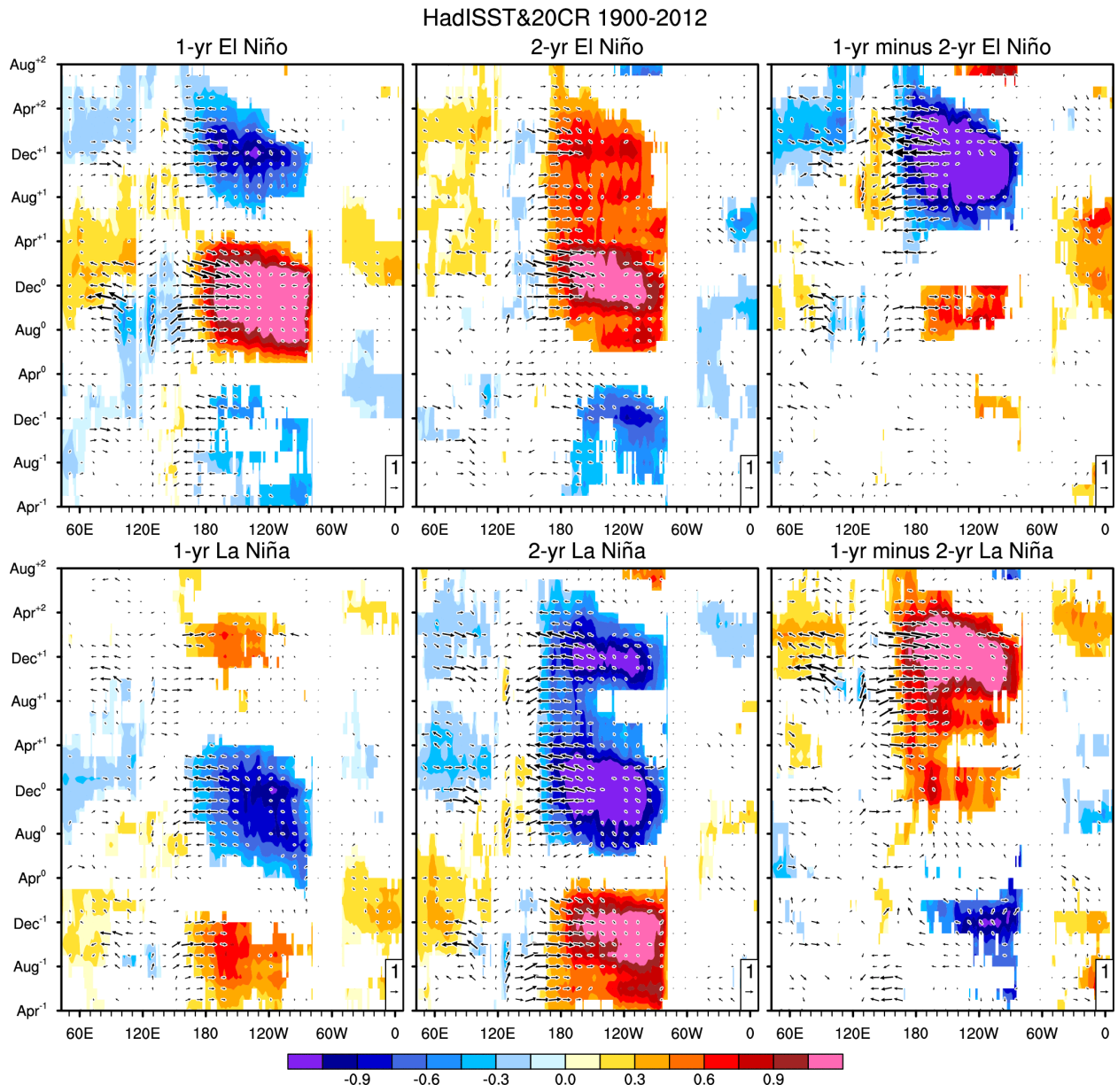
46 **Figure S6.** As in Fig. 7 but based on the HadISST and 20CR datasets for 1900-2012.



47

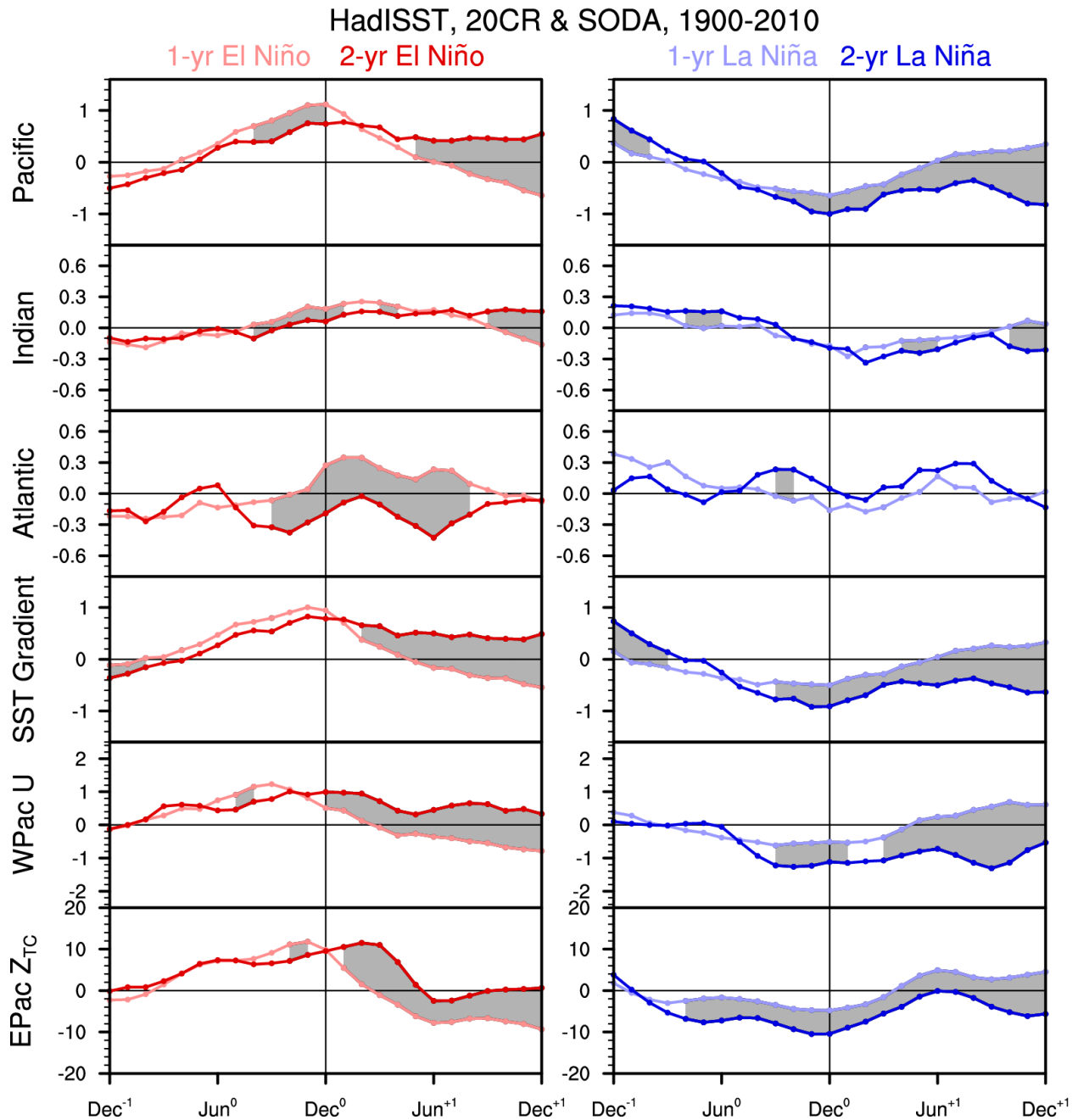
48 **Figure S7.** As in Figs. 7 and S6 but only anomalies statistically significant at the 98% (80%)

49 confidence level are shown for CESM1 (observation).



50

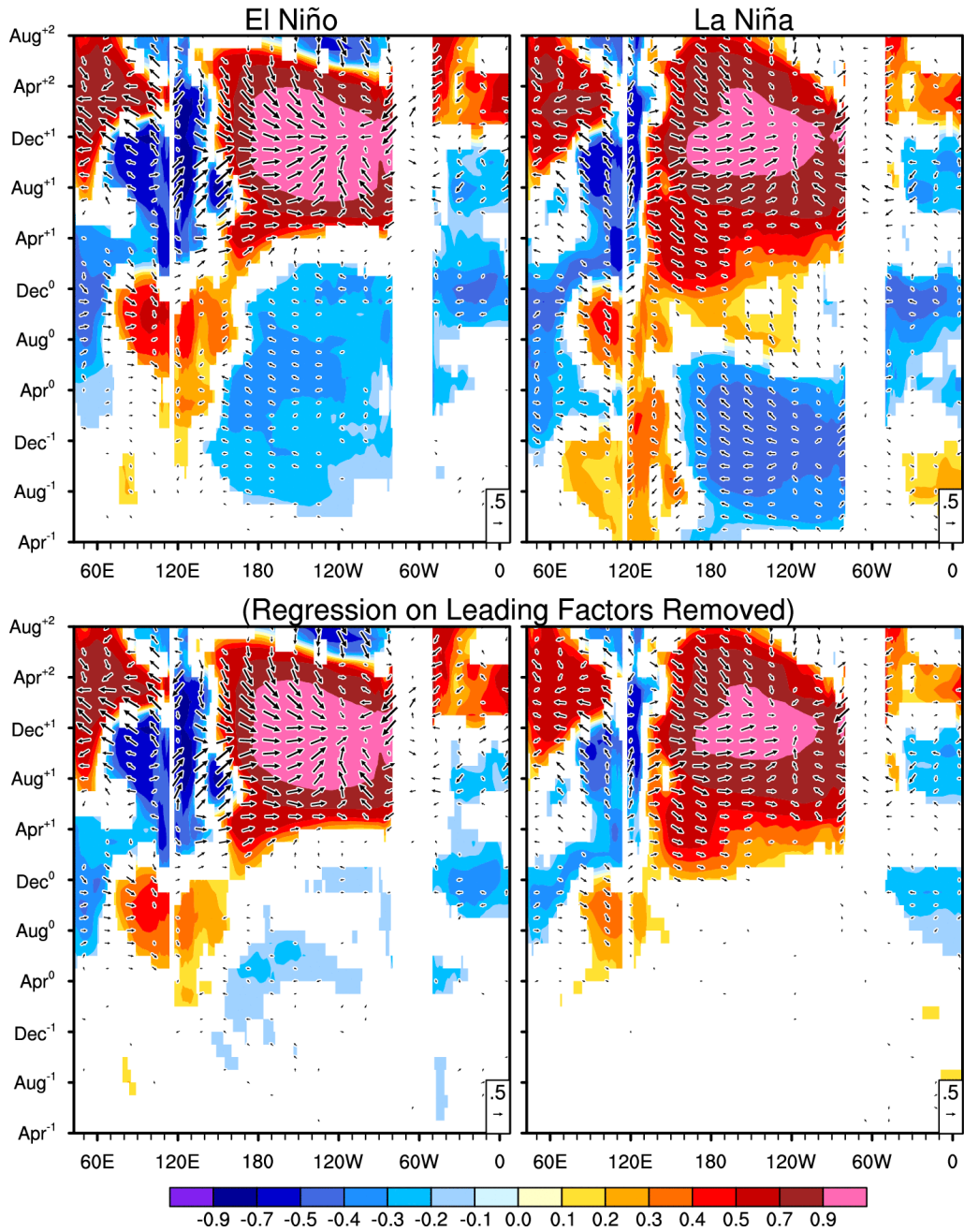
51 **Figure S7. (Continued)**



52

53 **Figure S8.** As in Fig. 8 but based on the HadISST, 20CR, and SODA datasets for 1900-2010. Gray
 54 shading indicates where the difference between the two composite is statistically significant at the
 55 80% confidence level. Note all the indices are smoothed with a 3-month running mean filter.

CESM1, Lead-Lag Correlation with Dec⁺¹ Niño-3.4

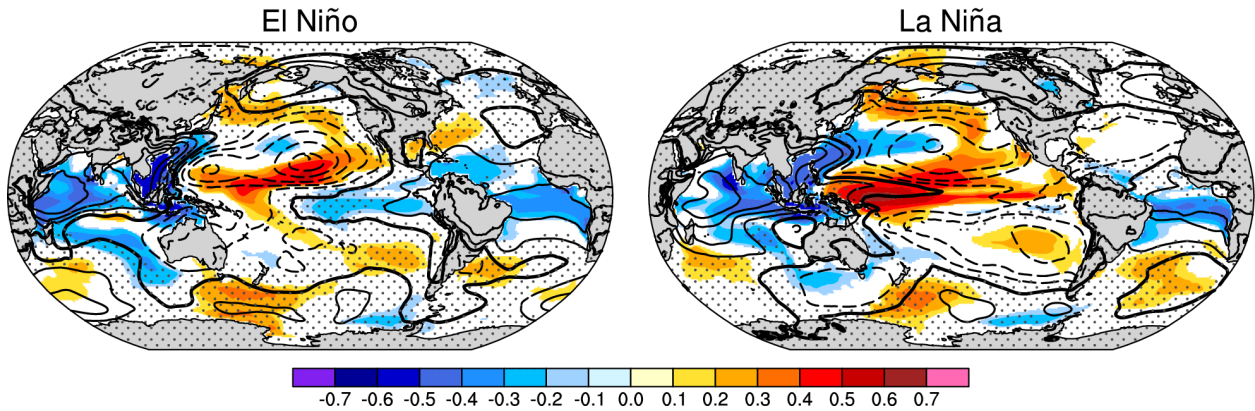


56

57 **Figure S9.** As in Fig. 10 but only correlations statistically significant at the 98% confidence level

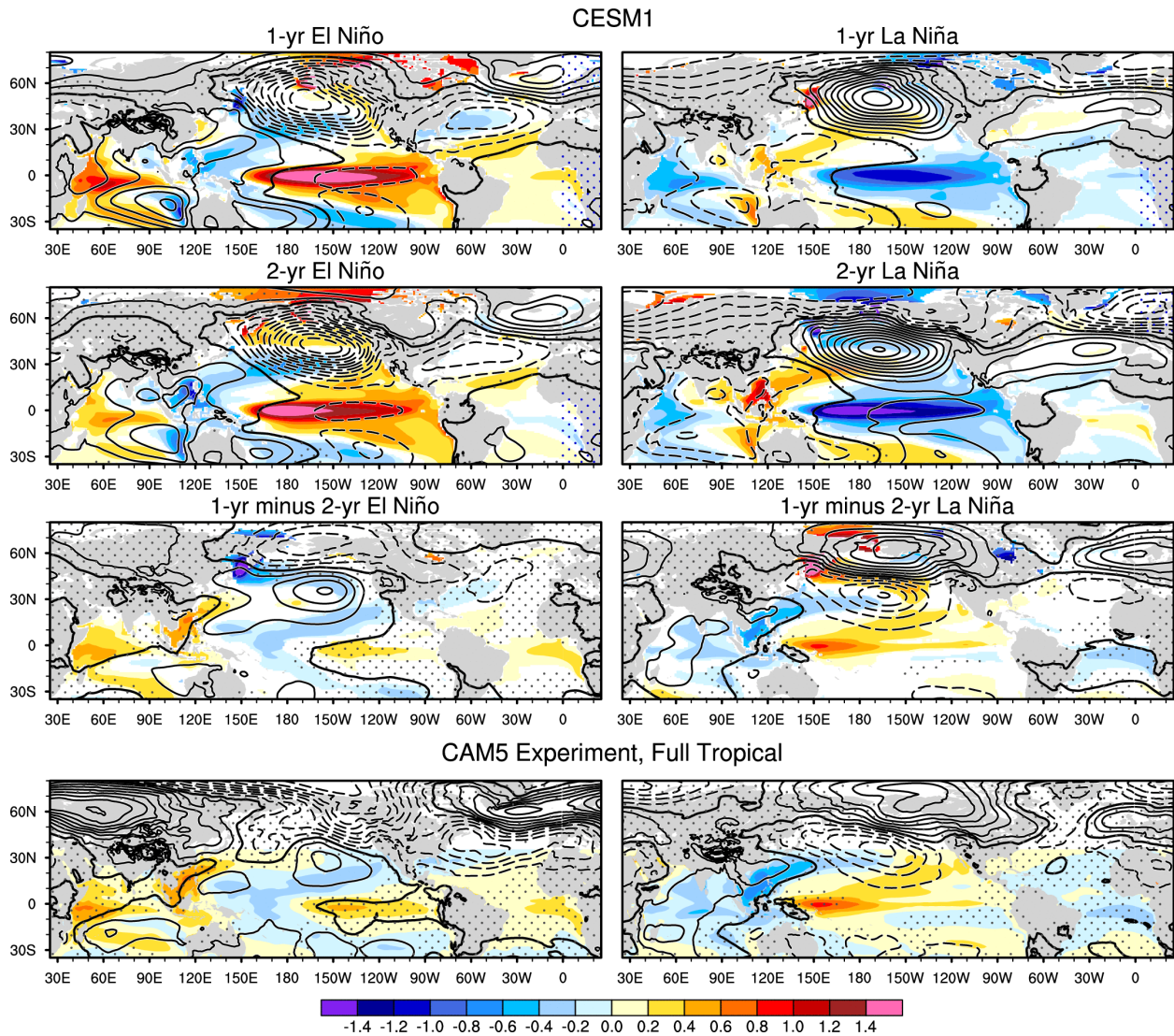
58 are shown.

CESM1, JFM⁺¹ SST/SLP Correlation with Dec⁺¹ Niño-3.4
(Regression on Leading Factors Removed)



59

60 **Figure S10.** As in Fig. 11 but only SST (shading) correlations statistically significant at the 98%
61 confidence level are shown. SLP correlations (contours) that are not statistically significant at the
62 98% confidence level are masked with gray stippling.



63

64 **Figure S11.** As in Fig. 12, but only SST (shading) anomalies statistically significant at the 98%
 65 (90%) confidence level are shown for CESM1 (CAM5 experiment). SLP anomalies (contours)
 66 that are not statistically significant at the 98% (90%) confidence level are masked with gray
 67 stippling for CESM1 (CAM5 experiment).