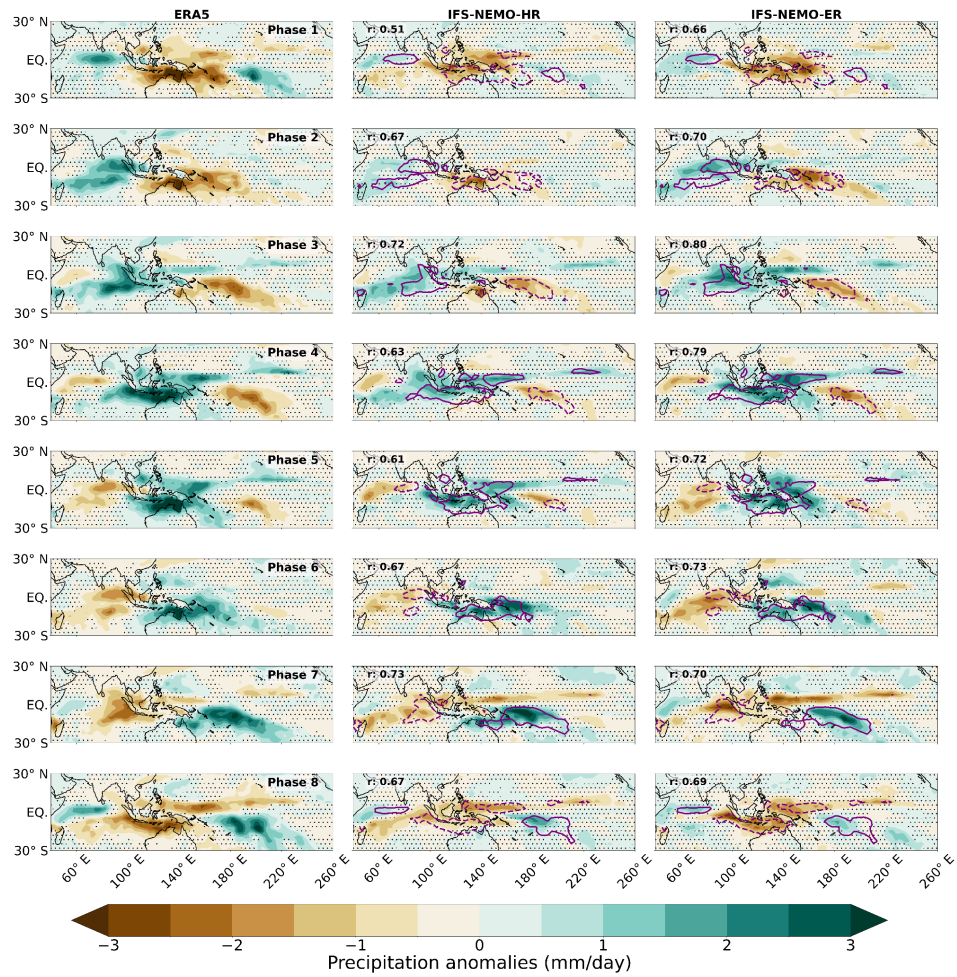


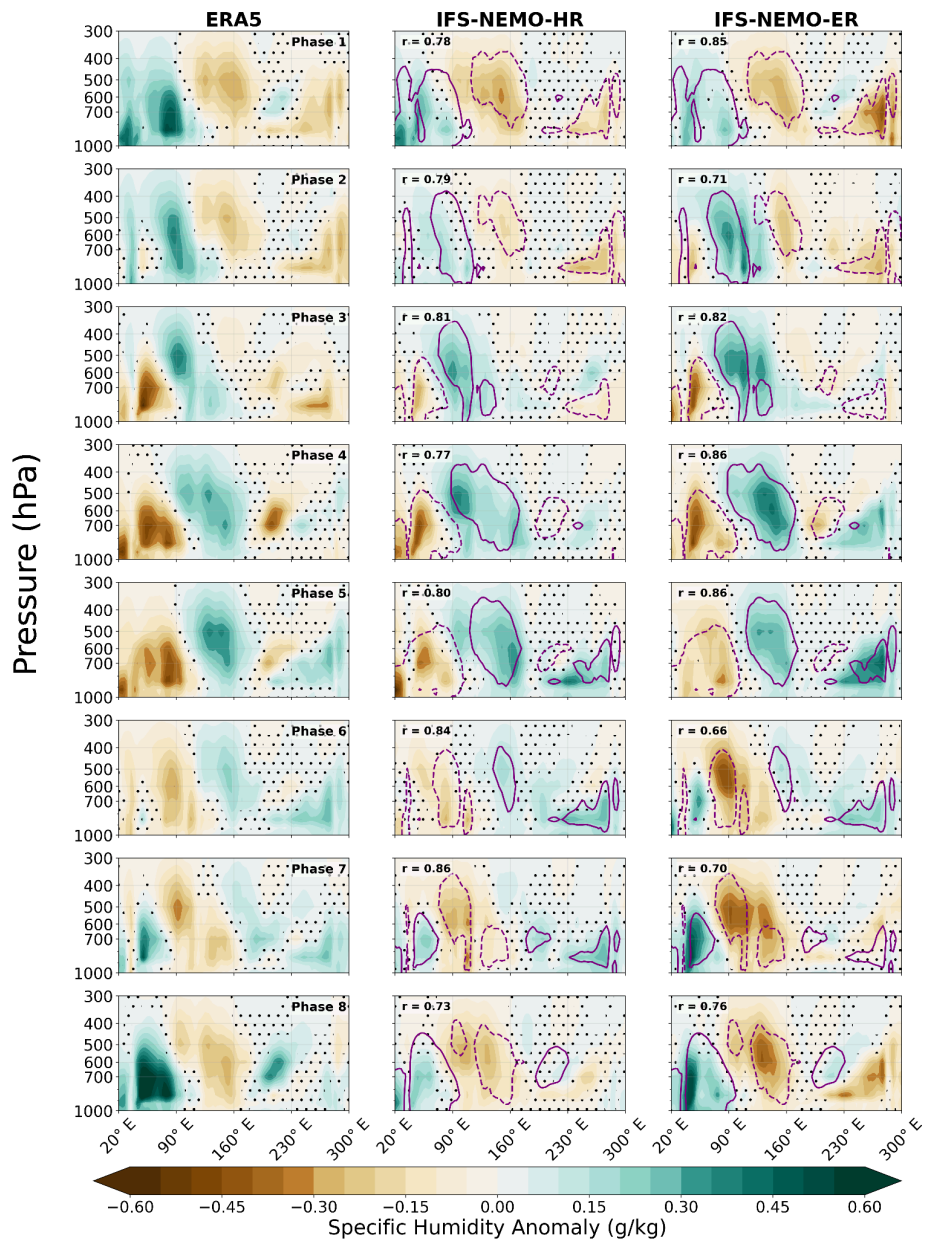
## 904 Supplementary Material



905

906 Figure S1: Same as Fig. 5. The MJO phases are defined by the RMMs obtained projecting the multivariate anomalies  
 907 of each dataset onto their respective set of EOFs.

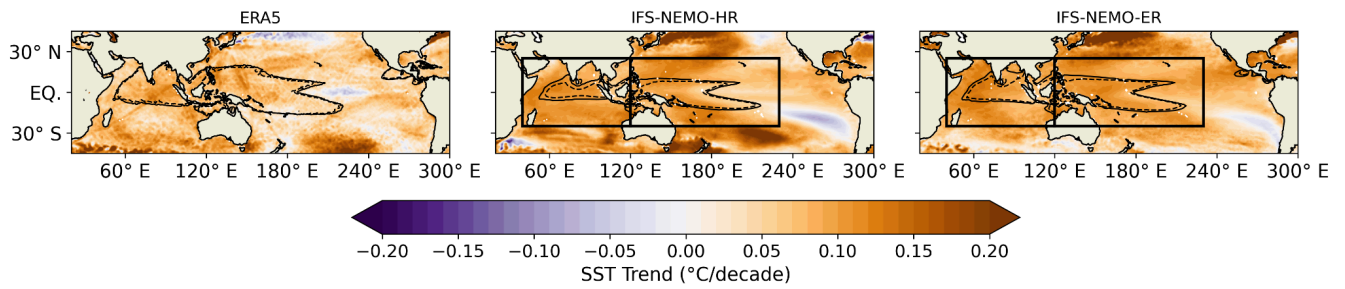
908



909

910 Figure S2: Same as Fig. 6. The MJO phases are defined by the RMMs obtained projecting the multivariate anomalies  
 911 of each dataset onto their respective set of EOFs.

912

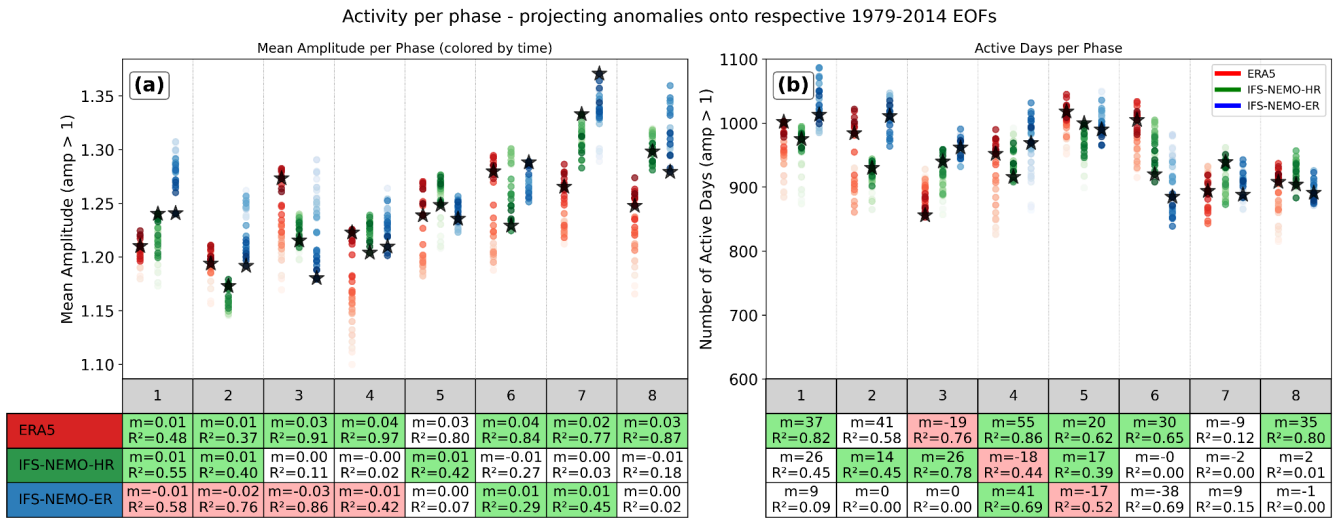


913

914 **Fig. S3: Sea surface temperature trend per decade over the period 1950-2014 in ERA5 and IFS-NEMO. The IPWP**  
 915 **area (the region with  $T > 28^\circ\text{C}$ ) for the first (last) 35-year window is delimited by dashed (continuous) black contours.**

916 **The black boxes indicate the Indian Ocean region and the Western Pacific regions.**

917



918

919 **Figure S4: Same as Fig. 9. For each 35-year window, the MJO phases are defined by the first two leading PCs of each**  
 920 **dataset respectively.**