

SLP POWER SPECTRA

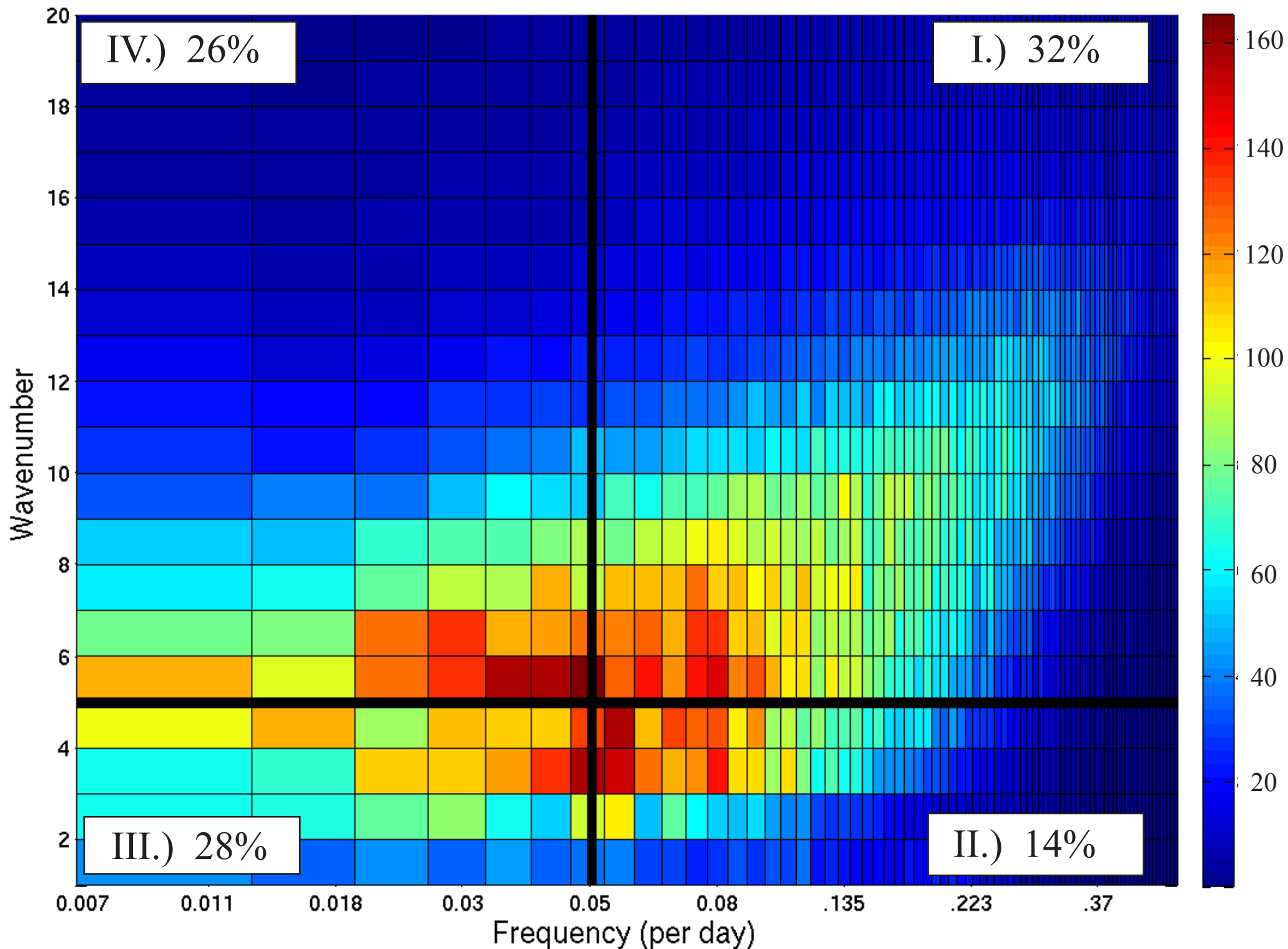


Figure 1. NDJFM SLP power spectra in natural log frequency/wavenumber space in $\text{hPa}^2 \text{ day}^{-1}$ per discrete spectral realization. The plotting convention is discussed in the text. The thick, black, horizontal (vertical) line represents the boundary of the spatial (temporal) filter. The four quadrants are discussed in the text and are labeled in the corners with the percent of total variance contained in the quadrant domain.

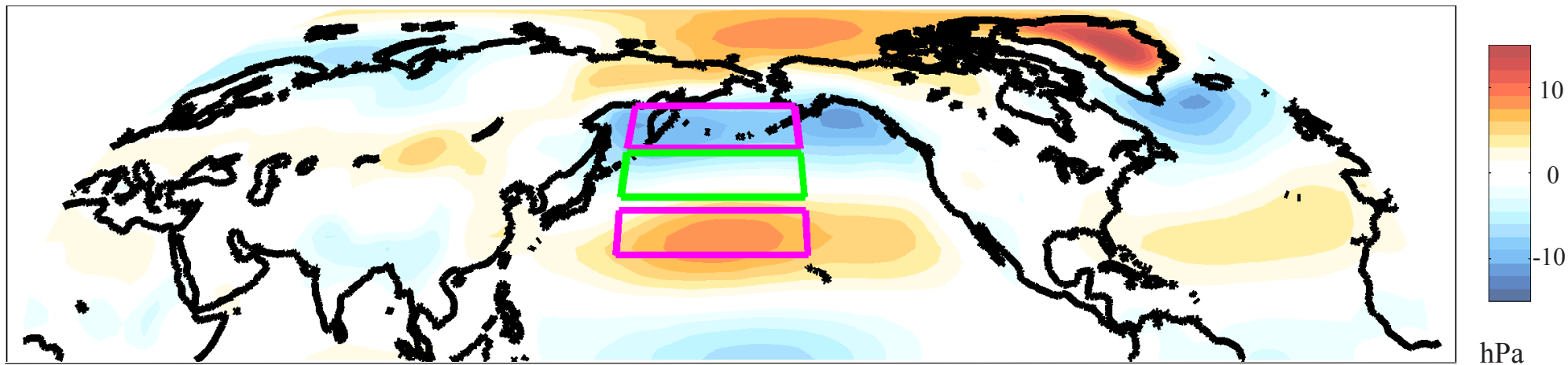
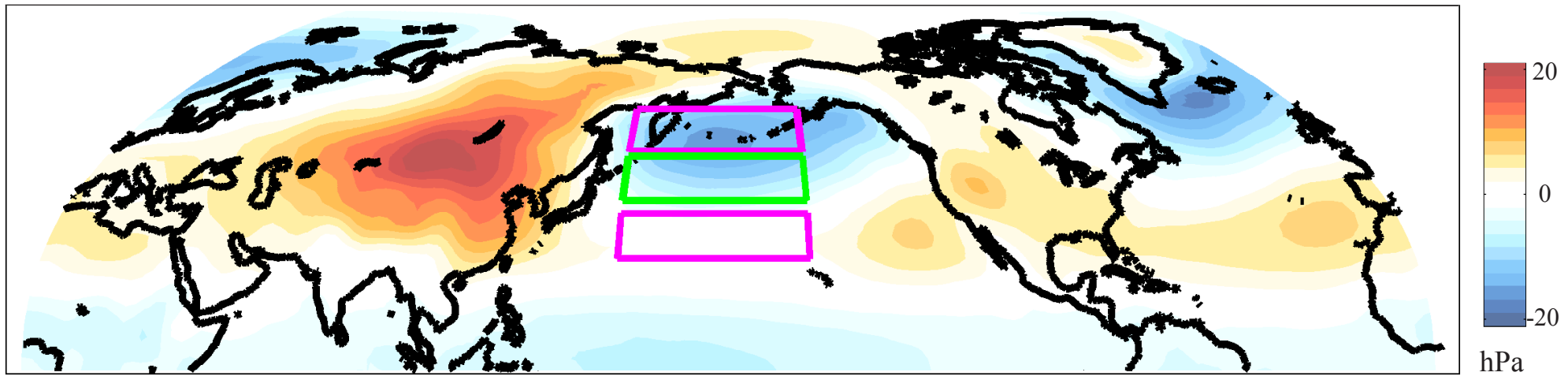


Figure 2. NDJFM SLP time mean full field minus global mean (top panel, hPa) and component of time mean that is greater than planetary wavenumber 5 (bottom panel, hPa). The boxed domains represent the high, middle, and low latitude Pacific domains (used in Section 3) over which the time average of the spatially filtered field is negative, neutral, and positive respectively.

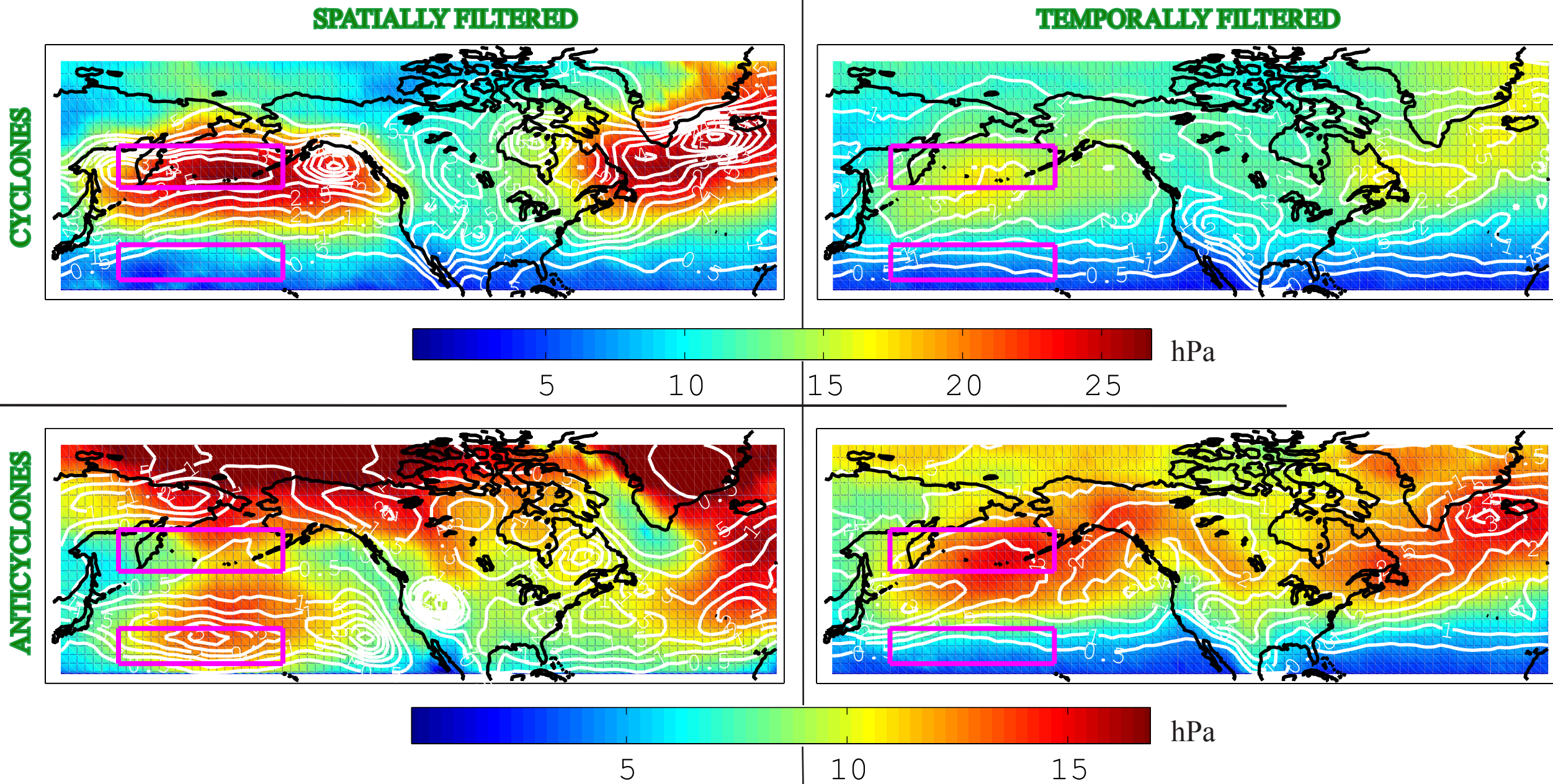
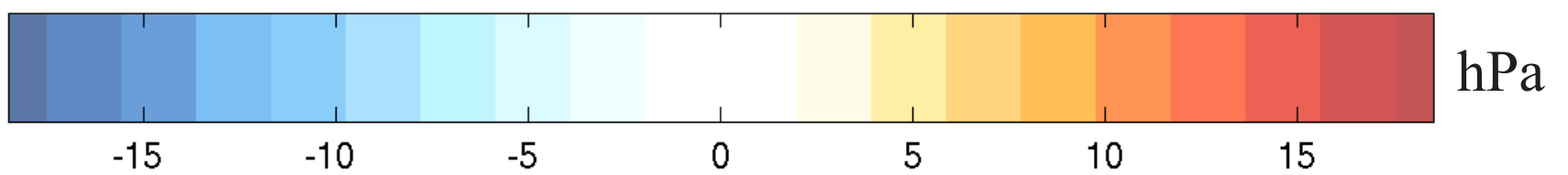
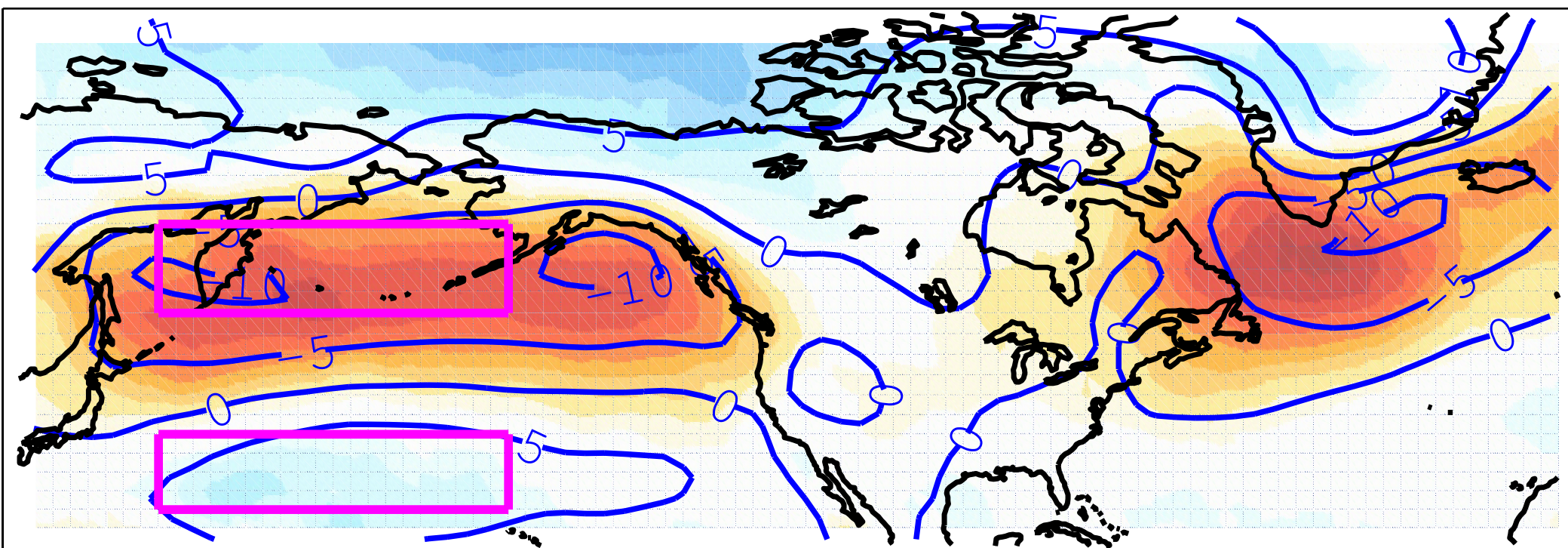


Figure 3. Magnitude (hPa, colors) and feature density (contours, features per month) for cyclones (top panels) and anticyclones (bottom panels) defined from the spatially (left panels) and temporally (right panels) filtered SLP fields. The definition of magnitude and feature density is discussed in the text. The purple boxes represent the low and high latitude north Pacific domains (also shown in Figure 2).

Spatially Filtered



Temporally Filtered

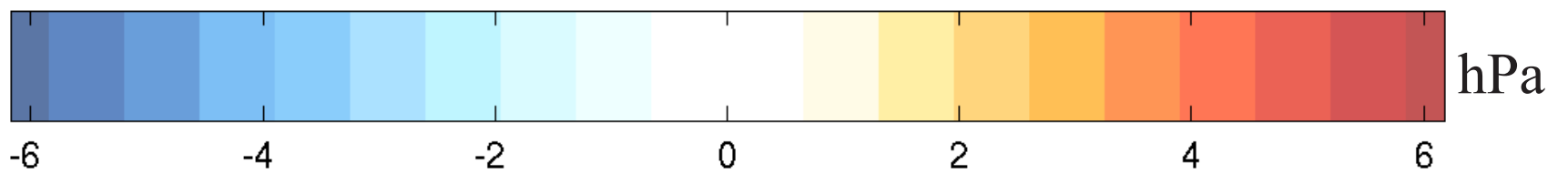
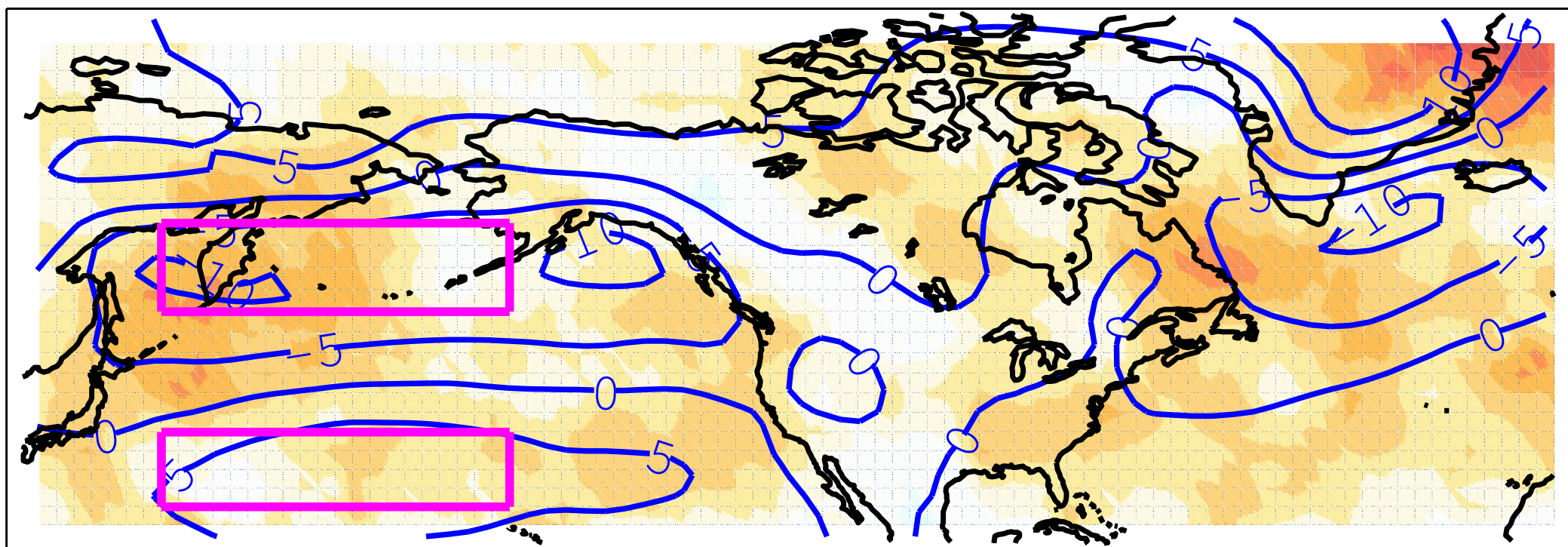


Figure 4. The difference (hPa) between the SLP average cyclone magnitude and the average anticyclone magnitude (colors) for the spatially filtered fields (top panel) and temporally filtered fields (lower panel). The contours are the time average spatially filtered SLP field (hPa).

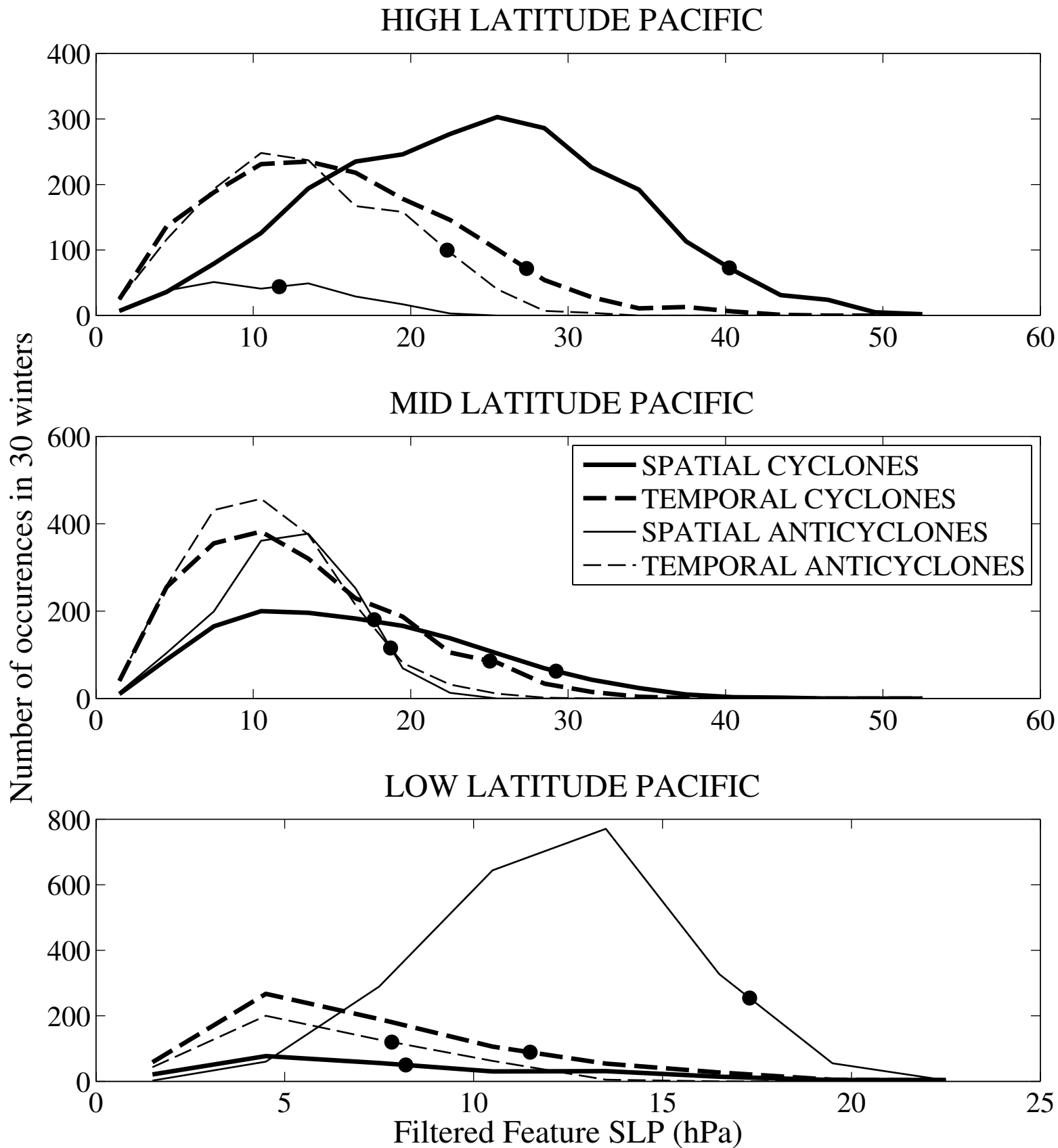


Figure 5. Feature magnitude histograms for cyclones (thick lines) and anticyclones (thin lines) identified in the spatially (solid lines) and temporally (dashed lines) filtered fields. The top, middle, and bottom panel are for features identified in the high, middle, and low latitude North Pacific defined within the text and boxed in Figure 2. Each distribution bin spans 3 hPa of feature magnitude. The black dots represent the cutoff storm magnitude for the 100 largest magnitude features in each distribution.

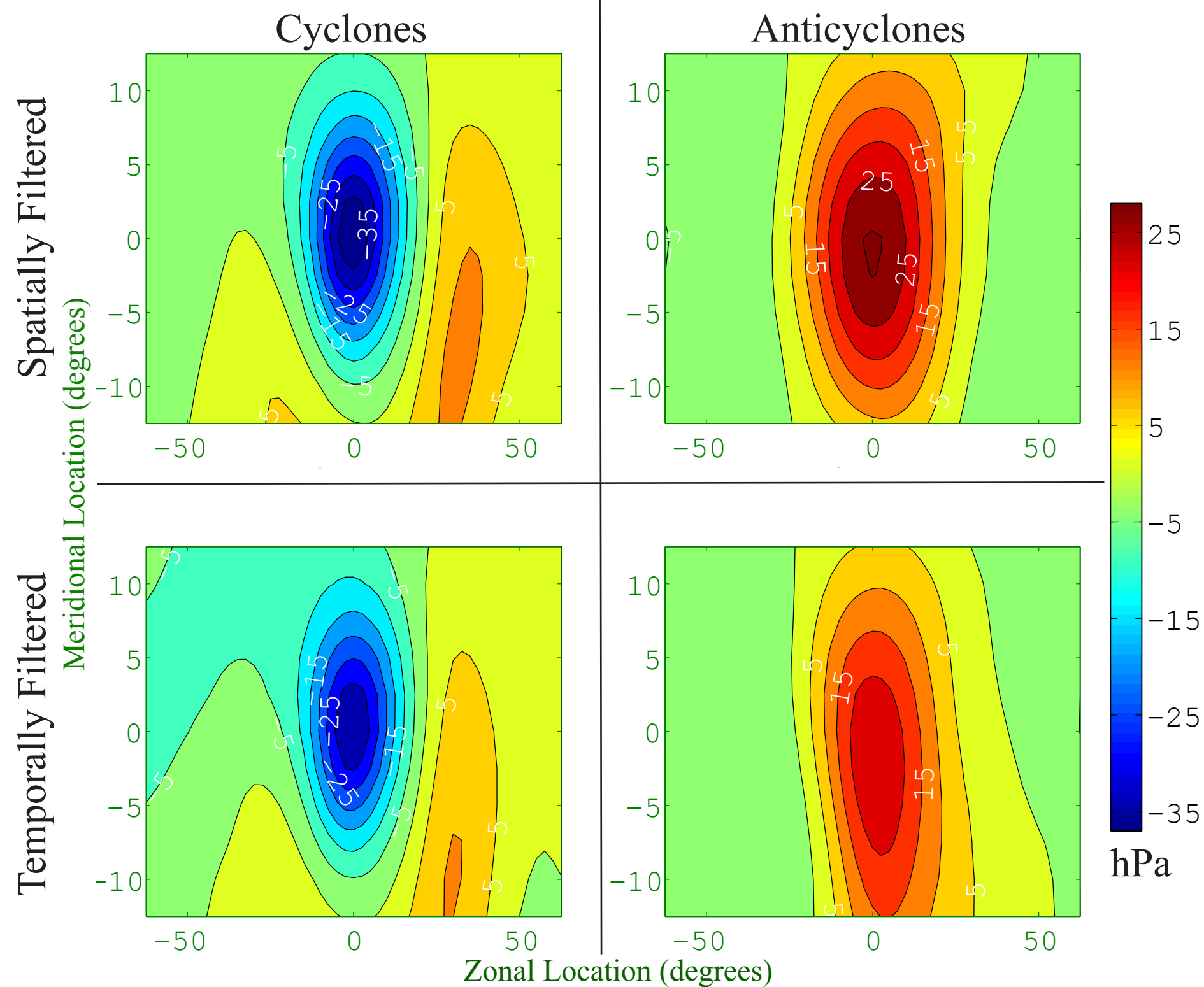


Figure 6. SLP high-latitude north Pacific composite maps of tracked features for the spatially (top panels) and temporally (bottom panels) filtered cyclones (left panels) and anticyclones (right panels) in hPa departure from climatology. The zonal and meridional distances are in degrees relative to the features' location.

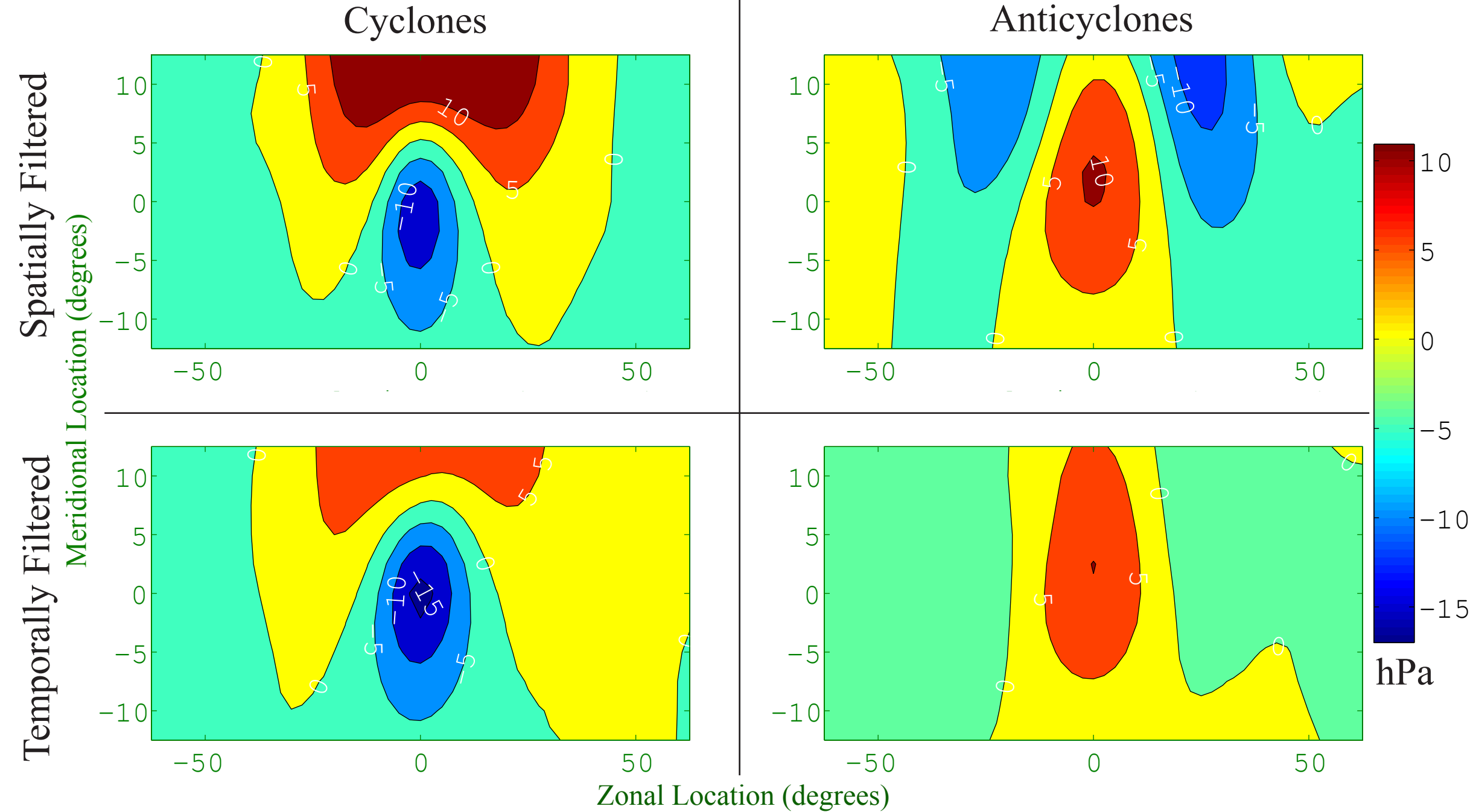
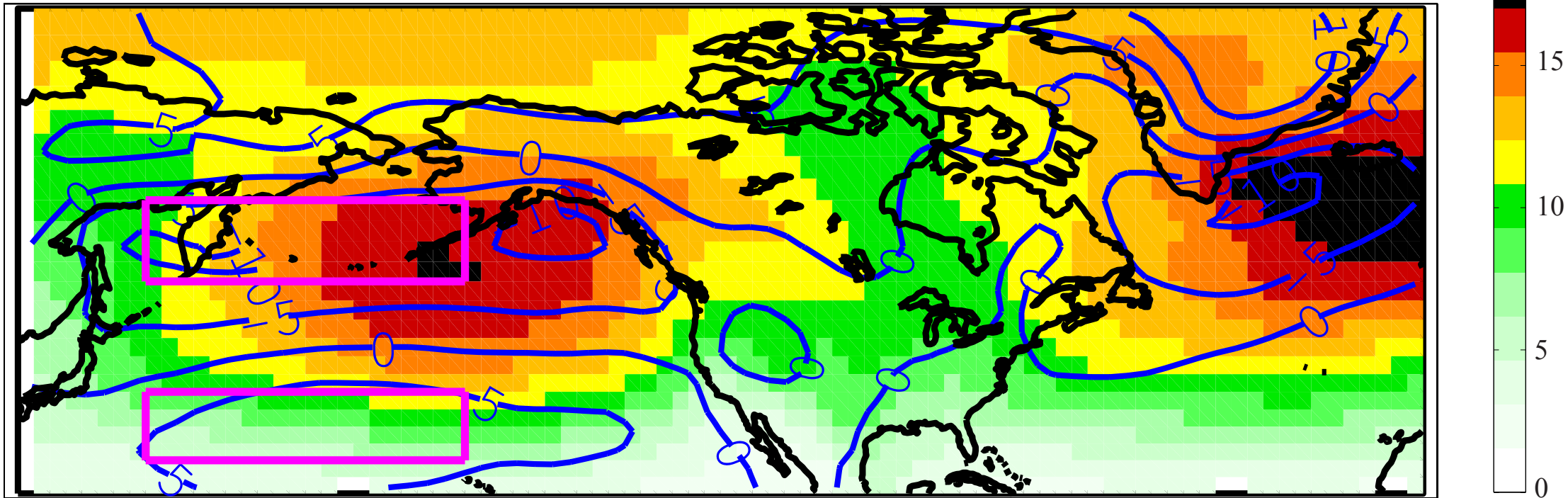


Figure 7. Same as Figure 6 except for the low-latitude north Pacific.

Standard Deviation



Skewness (normalized)

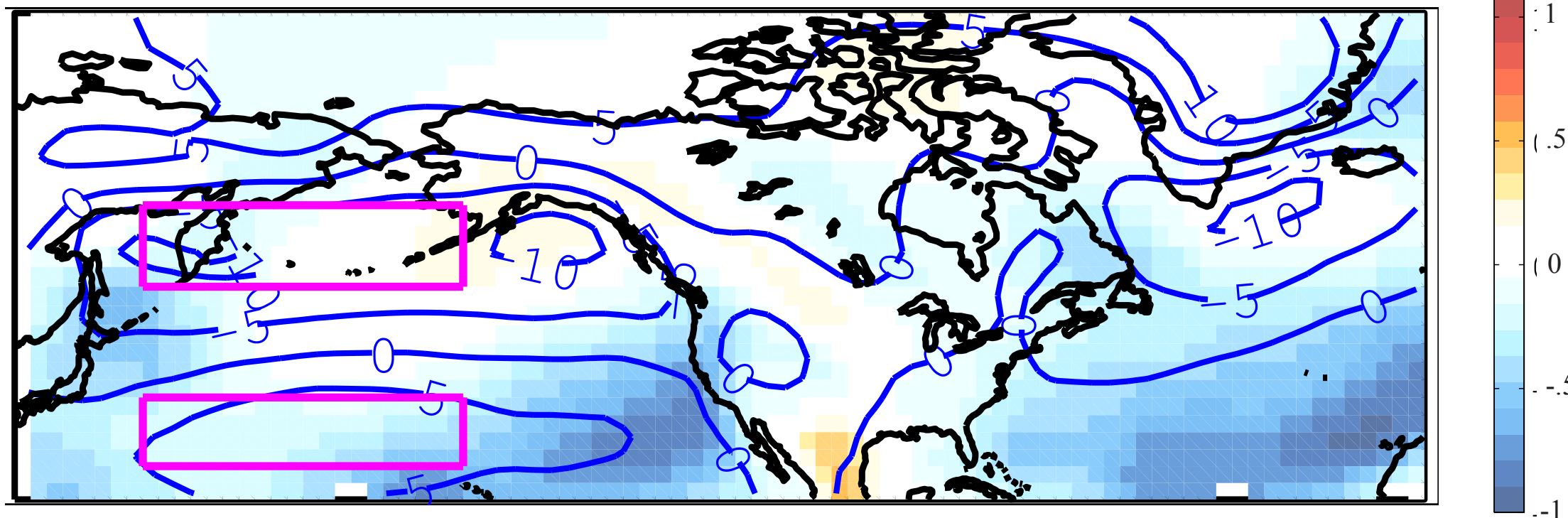


Figure 8. NDJFM SLP skewness normalized by the cube of the standard deviation (colors, dimensionless top panel) and standard deviation (colors, hPa, bottom panel). The contours are the time average of the spatially filtered NDJFM SLP field in hPa.

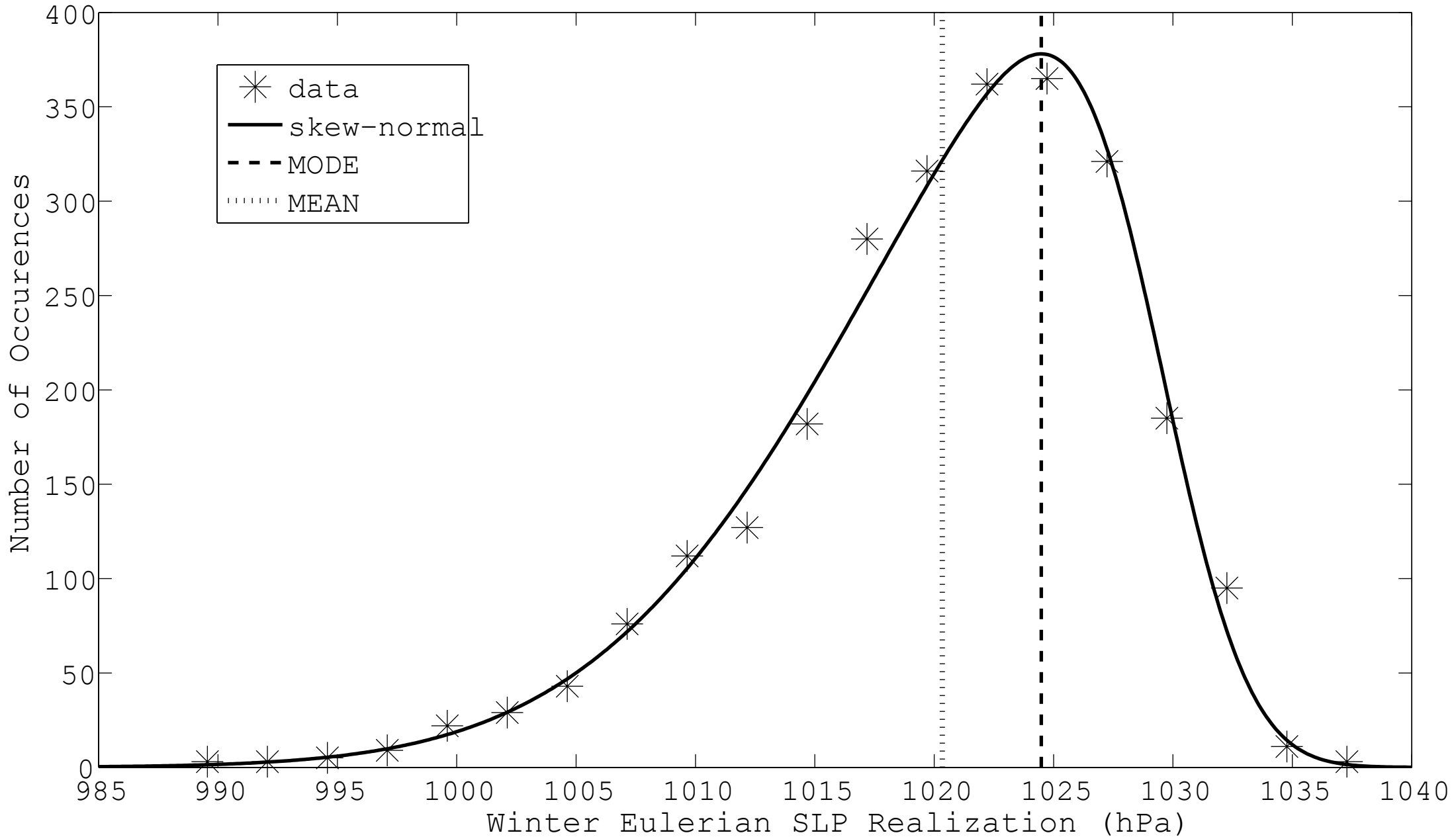
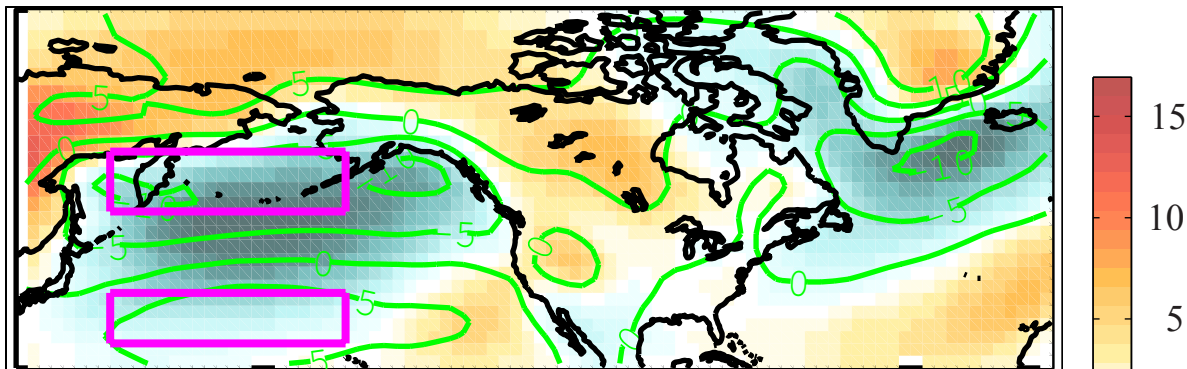


Figure 9. Histogram of NDJFM SLP data at 130W and 35N (asterisks) where the distribution mean (dotted vertical line) is 1020.3 hPa, the standard deviation is 7.45 hPa and the normalized skewness is -0.78. The solid line is the skew-normal distribution determined from the first three moments of the data and the vertical, short dashed line is the distribution mode (1024.5 hPa).

Mode Map



Offset due to Skewness

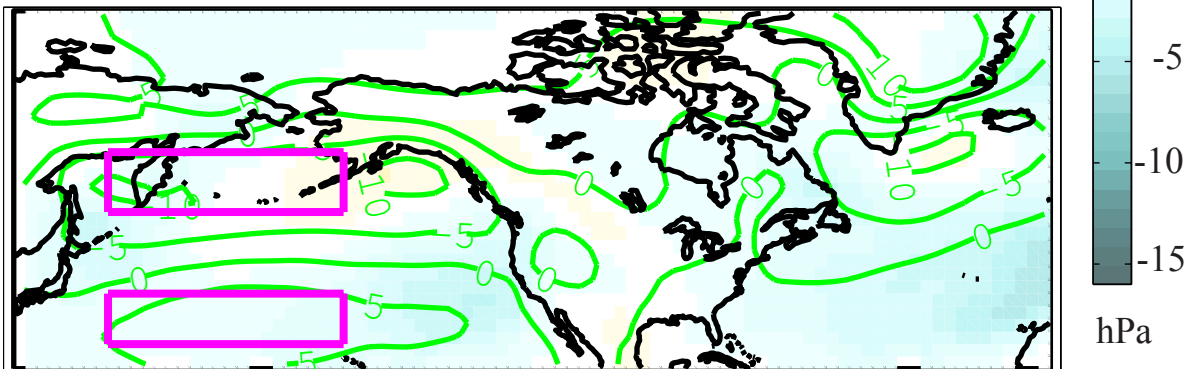


Figure 10. Map of NDJFM SLP mode map attributed to stationary features (top panel, colors, hPa departure from global mean SLP) and offset due to skewness (bottom panel, colors, hPa). The contours in both panels are the time average of the spatially filtered SLP field in hPa.