Figure 6. Correlation maps where colors reveal magnitude of correlation (r) between PCs 1-3 (A-C) for Σ and time series of detrended NCEP/NCAR near surface temperature anomalies (SAT*) around the globe. Overall significance of correlations relative to that expected from correlation with colored noise, comparable in statistical characteristics of PCs is assessed by comparison of sample PDF for correlation map (histogram) to bootstrap (noise) PDF (smooth Gaussian-like curves) for each mode. Inset near PDFs shows average frequency of occurrences of correlations in the positive upper 2.5% of the bootstrap (noise) and one-sigma error bar about this average value based on the accumulated values achieved in 1000 bootstrap noise correlation maps. Red box in inset is a combined histogram class for the upper 2.5%, or of all of the classes indicated in red in the actual frequency of occurrence achieved from the observations. In all cases the data show considerably more strong (rare) correlations than would be expected from correlations involving quasi-periodic colored noise time series. Finally, confidence intervals showing significance of correlations achieved and displayed by colors in the correlation maps are labeled in terms of number of standard deviations above or below that expected from noise. Those regions for which the correlations are significant at approximately 97.6% one-sided confidence (2σ) are surrounded by bronze-colored contours. For 3σ (99.98% one-sided confidence level) are surrounded by yellow contours. Note considerable number of highly significant correlations. Significance accounts for autocorrelations in space, time and multiplicity (see Appendix for discussion of significance and further discussion of these PDFs and their interpretation).

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