1 paper de la onda 3

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"Tradicional" analysis.

Now this has some problems... yada yada yada, alternative analysis.

New seasons

Cálculo de las estaciones mediante componentes principales.

Uso los campos de geopotencial con la onda 0 y 1 filtradas entre -70 y -35

(Amplitude and R^2 are shown for completion, but they are redundant. The final draft will only show one –probably amplitude)

PC1 and PC2 both are dominated by a wave 3 pattern. They both explain an almost equal proportion of the total variance and represent a wave 3 pattern offset by 1/4 wavelength. From that, one can infer that they are degenerated modes that represent the same wave pattern and it's meridional movement. PC3 is mainly a hemispheric scale wave 2 with a small contribution of wave 4 north of 45°S. PC4 exhibits a more complex pattern with both waves 2 and 3 contributing to the field. The result is a wave 3-ish pattern on the eastern hemisphere that affects the Atlantic and the Indian oceans but disappears over the central-south Pacific.

This result suggest that the ZW3 could be represented by a linear combination of PC1 and PC2 at the same time preserving it's meridional propagation and zonal variation.

An optimal (if somewhat arbitrary) division of the year can be seen in Figure X based on monthly mean values of each PC...

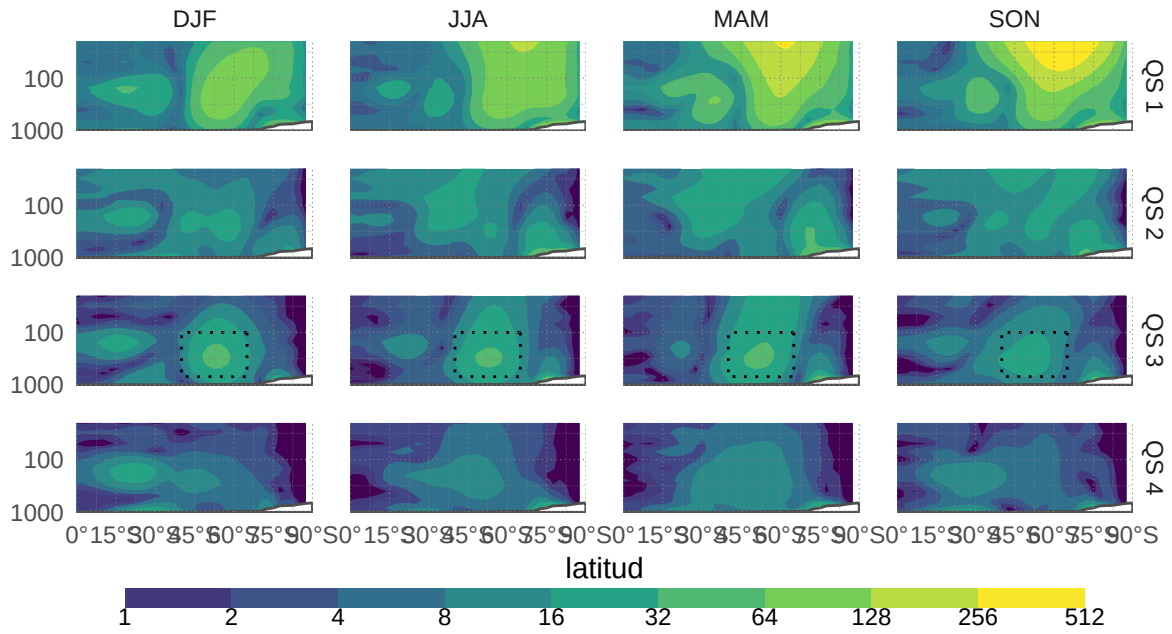

Figure 1: Fourier amplitude of geopotential height

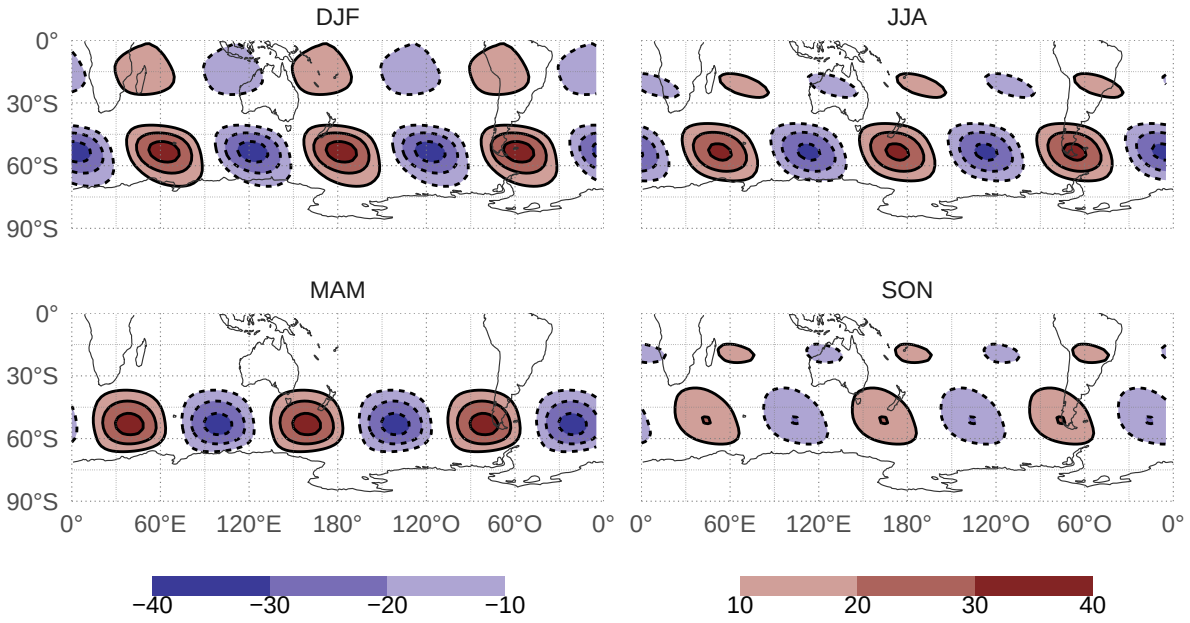

Figure 2: Wave 3 component of the geopotential field of each season at 200hPa.

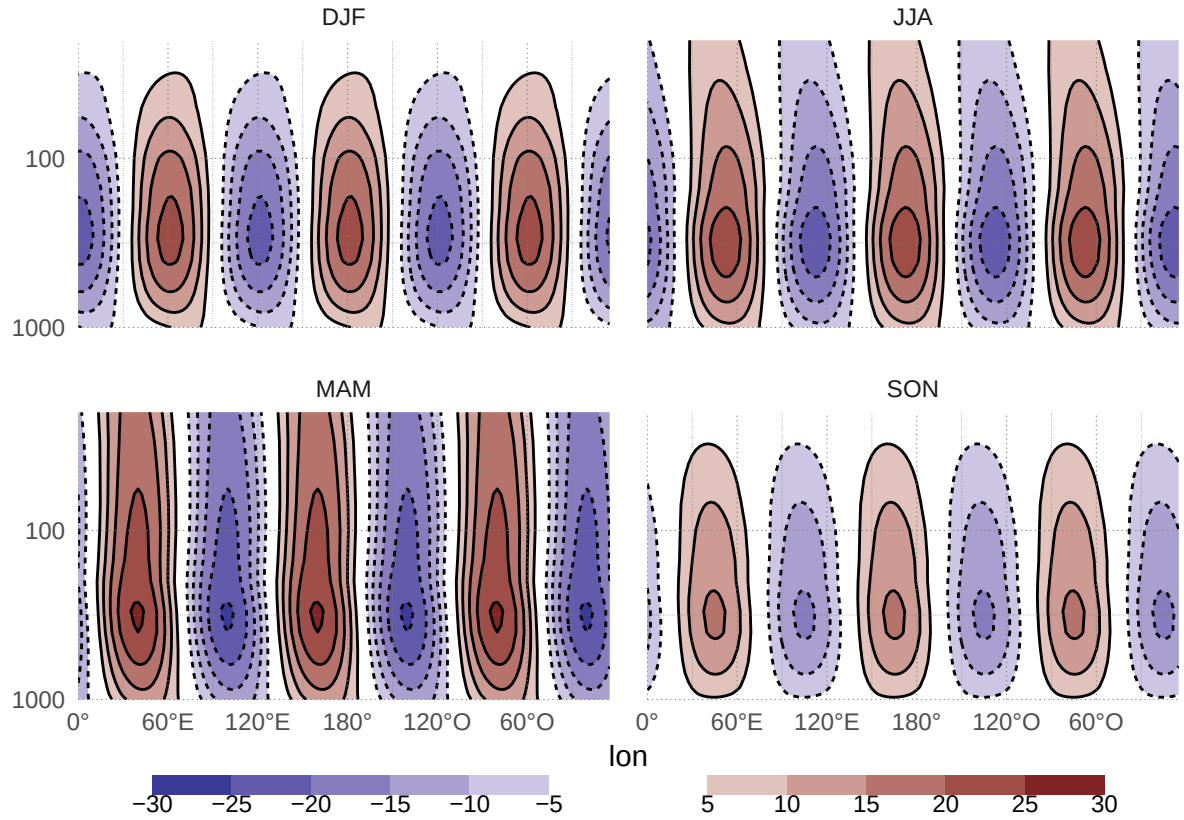

Figure 3: Mean wave 3 component of geopotential height between 65°S and 35°S

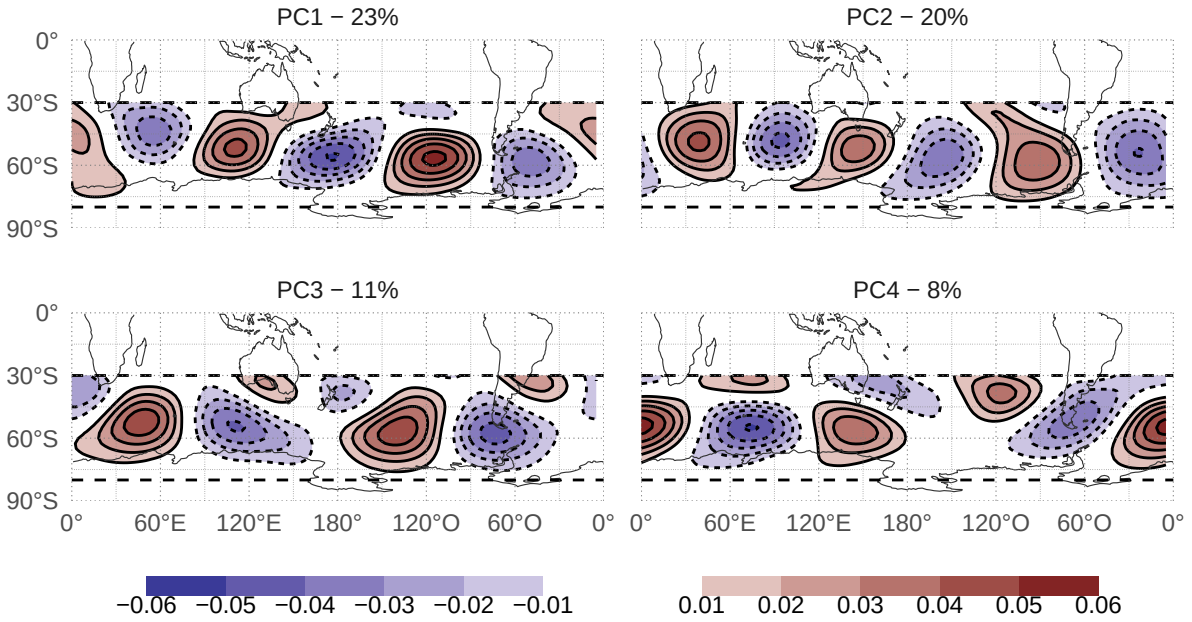

Figure 4: First 4 EOFs derived from the zonal anomaly of geopotential field with wave 1 removed at 200hPa between 30°S and 80°S.

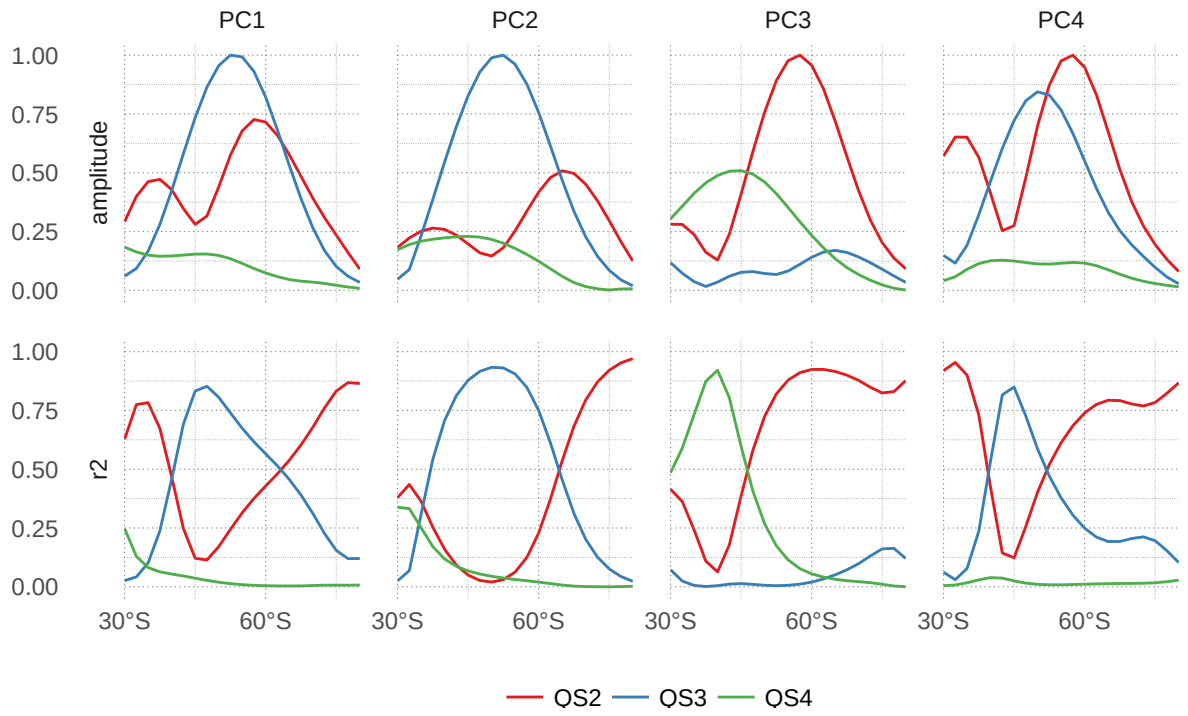

Figure 5: Fourier decomposition by latitude of each EOF.

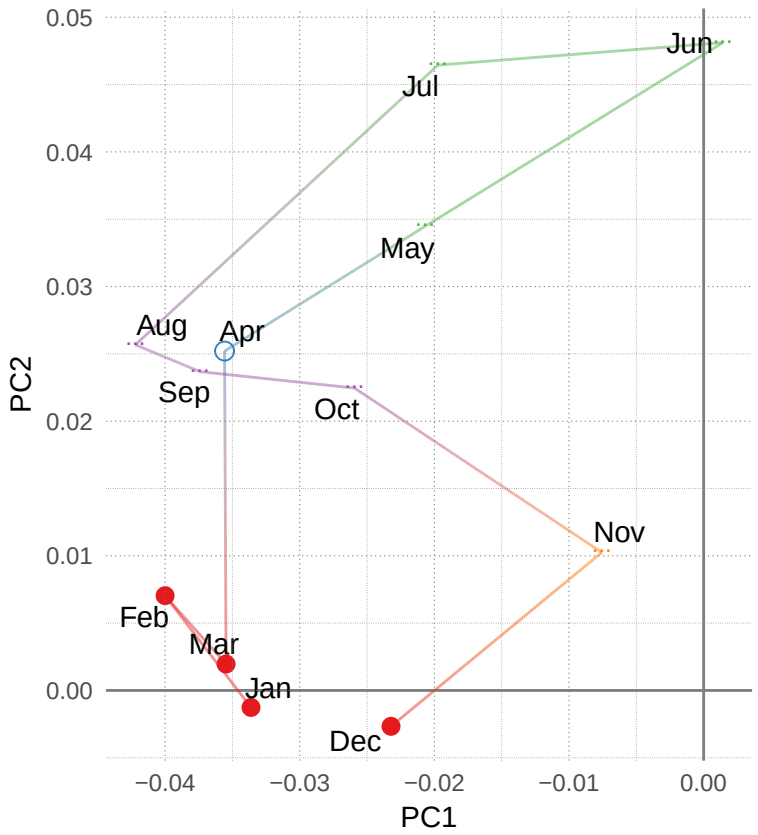

Figure 6: Monthly mean values for each PC. Colors and shapes divide months into 5 'seasons'.