We present an updated compilation of earthquake focal mechanisms in Brazil together with the sub-Andean region through more obtained solutions together with published results from the literature and catalogs of international agencies. Stress orientations from breakouts and in-situ measurements were also compiled. The focal mechanisms were classified according to WSM (World Stress Map) criteria. For Brazil, we have 82 earthquakes with the mechanism that has been determined since 1978, begin that three new from this study. Focal mechanisms in Brazil show reverse, strike-slip and normal faulting while all events in the sub-Andean region have reverse (majority) or strike-slip mechanisms. Normal mechanisms can be found only in high attitudes. The mechanisms were grouped by proximity to be inverted for the stress tensor. We use the bootstrap technique to analyze the stability of the tensor. In SE Brazil and the Chaco-Pantanal basins, S1 tends to be oriented roughly E-W with S2 approximately equal to S3. This stress pattern changes to purely compressional (both SHmax and Shmin larger than Sv) in the São Francisco craton. A rotation of SHmax from E-W to SE-NW is suggested towards the Amazon region. Along the Atlantic margin, the regional stresses are affected by coastal effects. This coastal effect tends to make SHmax parallel to the coastline and Shmin (usually S3) perpendicular to the coastline. Few breakout data and in-situ measurements are available in Brazil and are generally consistent with the pattern derived from the earthquake focal mechanisms. In the sub-Andean region, the intermediate principal stress (S2) is also compressional, a feature that is not always reproduced in numerical models published in the literature. In mid-plate South America stresses seem to vary in nature and orientation. Although numerical models of global lithospheric stresses tend to reproduce the main large-scale features in most mid-plate areas, the S1 rotation from E-W in SE Brazil to SE-NW in the Amazon region are not well explained by the current numerical models. This means that the observed stress pattern in mid-plate South America should provide new insights into upper mantle dynamics, distinct from current global convection models.

KEYWORDS: STRESS FIELD, FOCAL MECHANISM, BRAZIL