Some geomorphologic indicators of buried structures in sedimentary basins

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The South American plate is now in compression and in shortening. This is shown by stress data compilations, intraplate stress field numerical models and space-based geodetic results. The comparison between geological maps, topography and the subsurface structures of Brazilian basins put on evidence a systematic relief inversion: structural highs (e.g., trends of buried anticlines, major intrabasinal arcs and buried basement horsts) are topographic lows whereas structural lows (major synclines and depocenters) are topographic highs. The structural highs are usually associated with the most denudated areas, where older units (e.g. Mesozoic and Paleozoic rocks) outcrop. On the other hand, the denudation is minimum over structural lows, where younger units (e.g. Upper Cretaceous and Tertiary covers) form *mesas.* The observed topographic inversion has been interpreted as a consequence of the incipient tectonic inversion of those basins in response to the ongoing intraplate compression.

Investigating the observed relief inversion, we have made an analysis of the river captures integrated with other geomorphologic and geologic information (fluvial dissection degree, lithology, surface and subsurface structures) in some Brazilian sedimentary basins. The observation of drainage anomalies, as drainage elbows, traces of abandoned channels and the rupture of the drainage divides, configure a set of river captures that are concentrated along the boundaries of the more dissected relief compartments. A striking observation is that river captures are oriented towards the structural highs.