



## **Locating basin-centered asperities along the Chilean margin between 36° and 44°S based on gravity anomalies**

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Recent studies that suggest a global correlation between negative residual trench-parallel gravity anomalies and high seismic moment release (e.g. Song & Simons, 2003; Wells et al., 2003) have important implications for the state of plate coupling in south-central Chile.

The northern part of this region (36-39°S) is associated with positive fore-arc gravity anomalies, which implies low coupling in this part of the margin. Further south (39-44°S), optimised filtering of the gravity anomalies confirms that coseismic slip associated with the 1960 Mw 9.5 Valdivia earthquake correlates with fore-arc gravity lows centered on sedimentary basins.

An existing 3D density model for the region between 36° and 42°S (Tašárová, 2004) has been extended southward to 44°S using constraints from newly measured seismicity (Lange, pers. comm., 2006) and gravity anomalies from improved satellite models (Förste et al., 2006). This density model helps constrain the degree of plate coupling in this region and the causes behind its variation.