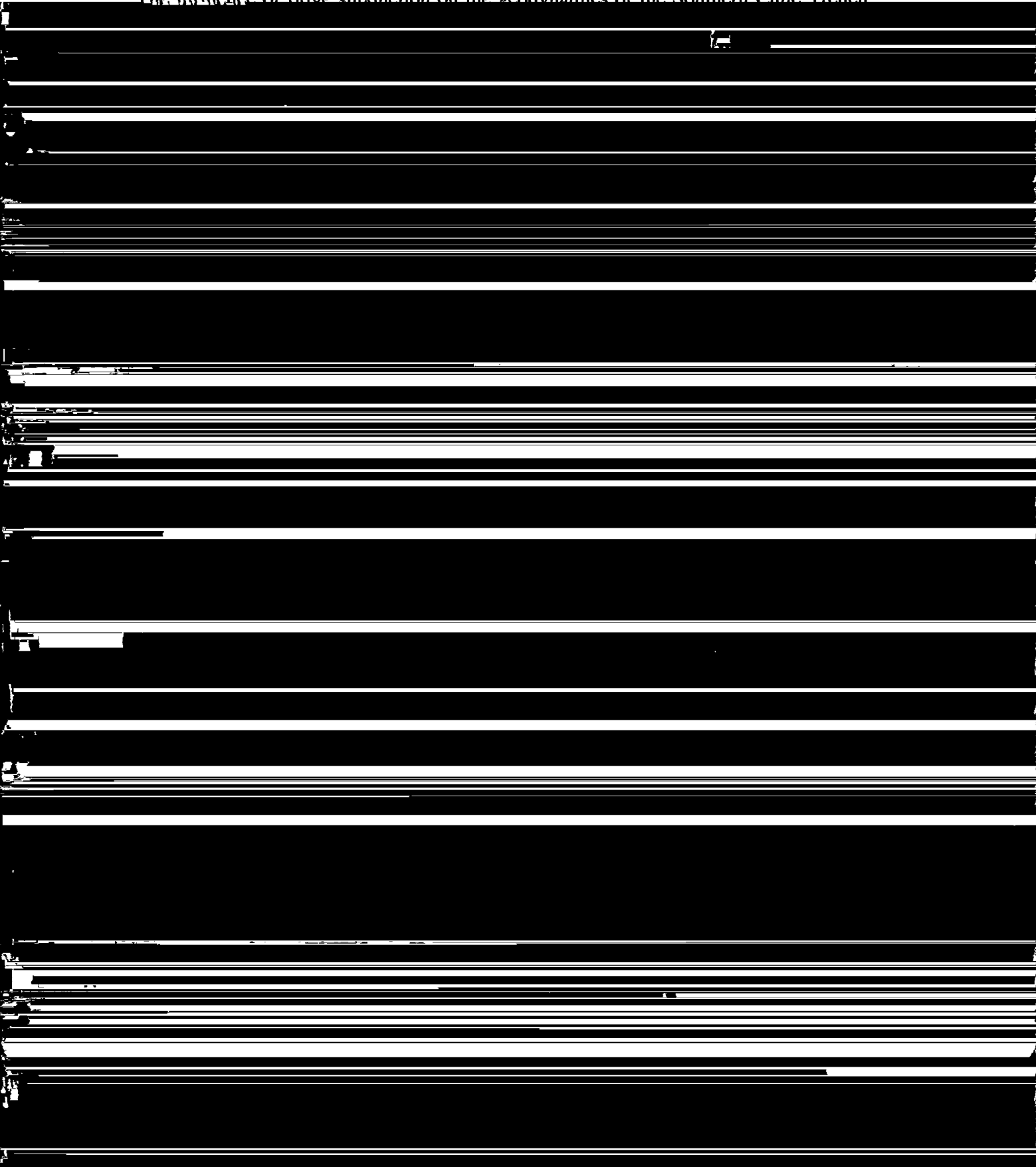


The influence of ridge subduction on the geodynamics of the Southern Chile Trench



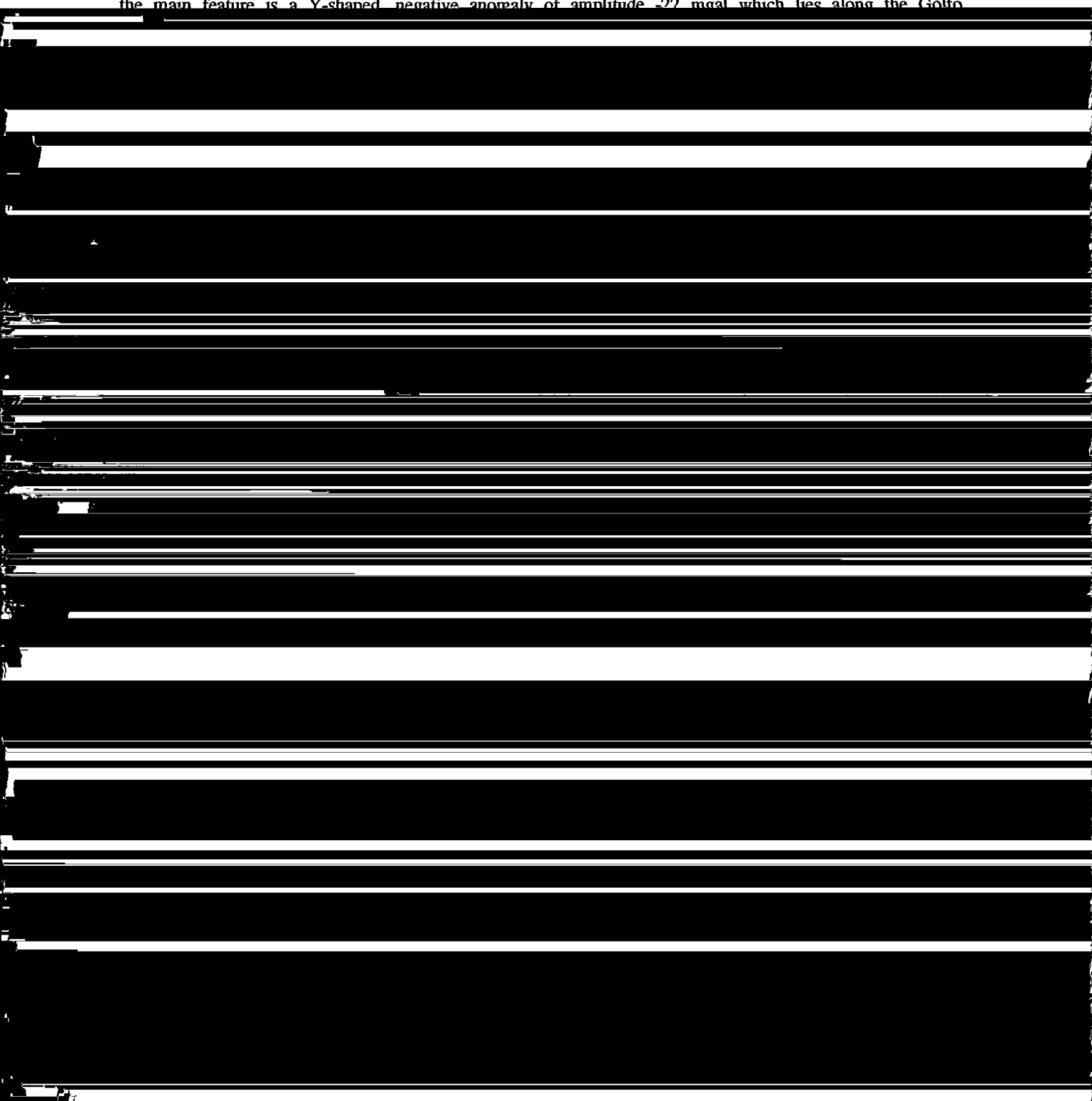
stations was set up in Region XI of Southern Chile. Data were collected over a four month period.

#### Gravity Aims

The pre-existing gravity data were mostly marine with very few terrestrial data points. Gravity lows are associated with the trench, Chile Rise and major fracture zones. On land a regional east-west gradient decreases towards the east. Estimates based on the thermal and bathymetric contrasts between differing age oceanic crust across the transform fault suggest that the Taitao Fracture Zone would give at least a 1 mgal Bouguer anomaly at a depth of 20km and distance from the trench of 50 km. It is hoped that a detailed gravity survey will show the anomalies associated with the trench and the Taitao Fracture Zone.

### Gravity Findings

Figure 2 shows a band-pass filtered Bouguer anomaly map of Region XI. which has had the regional trend removed and then been filtered to remove the high frequency content. . The map shows that the main feature is a Y-shaped negative anomaly of amplitude -22 mgal which lies along the Golfo



### Conclusions

This area is definitely shows seismic activity with the majority of events having normal source mechanisms These are probably related to the Liquini Ofqui Fault which is moving the Chiloe Block northwards in relation to the rest of the continent. The gravity data shows the postulated current position of the Tres Montes Ridge segment and the size of the Bouguer indicates that there has been an injection of a low density material in the region.

### References

- Cande S.C. & Lewis S. 1988 Investigating the subduction of a spreading centre off southern Chile. Lamont Doherty Geological Yearbook p18-25.  
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