

# **A Preliminary Investigation of the Co-seismic Height Anomaly Jump for the Maule Earthquake from Monthly GRACE Data**

Vagner G. Ferreira and Henry C. Montecino

**KEY WORDS:** Monitoring Concepts for Static and Dynamic Deformations of Engineering and Geotechnical Structures

## **ABSTRACT:**

We are currently carrying out a time series analysis of the Earth gravity field changes observed from twin GRACE (Gravity Recovery and Climate Experiment) satellites. Analysis of the monthly GRACE data set will explore co-seismic displacements for the Maule earthquake ( $M_w = 8.8$ ) that occurred on February 27, 2010 in Offshore Bio-Bio, Chile. Since the beginning of 2002, the GRACE monthly solutions of the Earth's gravity field are available; hence this time-variable gravity field solution contains information on the co-seismic change of the height anomaly for this earthquake. Initial results seem to indicate the anomalies caused by the co-seismic deformation from the 2010  $M_w = 8.8$  Maule earthquake is  $-6.5$  mm for the variations of the height anomaly. However, how to carefully eliminate the hydrological signals was the main hurdle to negotiate.