



## **Comparison of the dynamic sea surface topography with the ocean currents in the Southwest Pacific Ocean and Tasman Sea**

Robert Tenzer (1), Ahmed Abdalla (1), and Robert Čunderlík (2)

(1) National School of Surveying, Division of Sciences, University of Otago, Dunedin, New Zealand (robert.tenzer@otago.ac.nz), (2) Department of Mathematics, Slovak University of Technology, Bratislava, Slovakia

We analyze the spatial correlation of the mean dynamic sea surface topography with the ocean currents over the study area of the Southwest Pacific Ocean and Tasman Sea. The DNSC08 mean sea surface and the regional marine geoid are used to model the mean dynamic sea surface topography (MDSST). The boundary element method (BEM) is applied to determine the detailed gravimetric marine (quasi)geoid model using the DNSC08 marine gravity database. The averaged oceanographic models of the dynamic sea surface topography provided by the ECCO Consortium for Estimating the Circulation and Climate of the Ocean funded by the National Oceanographic Partnership Program (NOPP) are used to validate our result. We demonstrate that within the study area (of the Southwest Pacific Ocean and Tasman Sea) the mean dynamic surface topography is in a good agreement with the principal pattern of the ocean currents dominated by the Tasman Front section of the Subtropical Gyre and the Westland and Southland Currents.