Recent Research Results: Jer-Ming Chiu

(3) Comparison between the observed gravity anomaly and estimated gravity data converted from 3-D velocity structure and its implications – (a paper in preparation)

Summary: A 3-D density model can be determined from an empirical relationship between Vp and density. Gravity expected at a surface point can then be calculated by integration of gravitational force over the 3-D density model. Comparison between the observed and estimated (from 3-D velocity data) gravity data can provide important constraints to validate the two independently determined databases. We test this concept for the observed gravity data and 3-D Vp model, recently available for the Taiwan region.

Observed Calculated

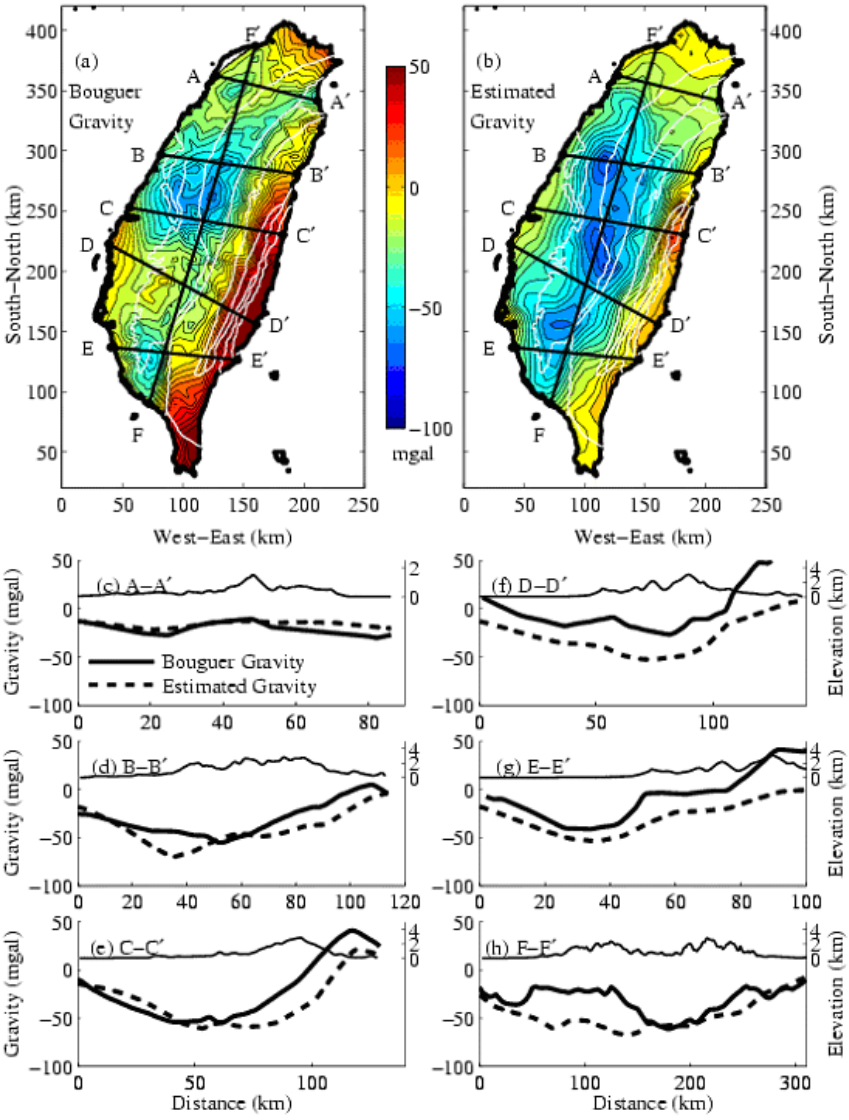

Figure. Observed (top left) and calculated (top right) gravity map for the Taiwan region and the comparison of two independently determined gravity databases along six cross-sectional views showing that the observed gravity data (solid thick line) and calculated gravity data from 3-D Vp model (dashed line) agree in general very well. However, the agreement seems better in northern than in southern Taiwan and better in western than eastern Taiwan.