# 3-D density modeling of the EGM2008 gravity field over the Mt. Paekdu volcanic area

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Here we use the satellite-derived gravity field dataset EGM2998 for 3-D crustal density modeling of the Mt. Paekdu stratovolcano and surrounding area located on the border between North Korea and China. The modeling is constrained by geological, geophysical, and potential field data analysis, and curvature analysis and Euler deconvolution are used to assist interpretation. Mt. Paekdu is characterized by low Bouguer anomaly values down to -110 X $10^{-5}$m/s$^2$, which are caused by the combined gravity effects of a depth to Moho of about 40 Km, a low velocity zone with lower P-wave velocity and lower density than the surrounding material, volcanic rocks with a mean density of 2200 kb/m$^3$ on the surface, and a predicted magma chamber that has not previously been identified. The newly modeled magma chamber has a mean thickness of 5 km and density of about 2350 kg/m$^3$, and lies at <10 km from the surface. Magma chambers are also modeled to occupy the crust beneath Mt Wangtian and Mt. Nampotae. However, the results of the 3-D density modeling do not confirm the existance of a previously proposed mid-crustal low velocity zone in the area 70 km to the north of Mt. Paekdu