

## Three dimensional subsurface structure in Teshikaga area, eastern Hokkaido clarified by gravity data

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Strain concentrated zone revealed by recent GPS study is indicated by increasing of delta CFF appeared after the 2003 Tokachi-oki earthquake in eastern Hokkaido, Japan. Intra-plate earthquakes (M5.5-6.5) occurred in 1960's in this area after the former 1952 Tokachi-oki earthquake. However, distribution of the earthquake faults has not been clarified by geological and topographic study, because thick Holocene deposit (more than 600m) covers at most of studied area. Therefore, we have been investigating about crustal structure to discuss process of strain concentration in this area based on magnetotelluric (MT) and gravity data. In this study, we have delineated the 3 dimensional subsurface structure by detail Bouguer anomaly map using approximately 1000 observed data including newly data. Analyzed model is approximated into two layers; sediment (2.0 g/cm<sup>3</sup>) and basement rock (2.60 g/cm<sup>3</sup>). This approximation is based on borehole and surface geologic data. Therefore, analyzed parameters become basement depth, which divided into 340 blocks in analysis region. We adopted inversion code of multi-Island genetic algorithm (Ichihara, 2005) for analysis. This algorithm has advantages of searching global minimum and parallelization for computing. These results indicate that geological discontinuous, which seems formed by dextral fault, located at extension of intra-plate earthquake fault revealed in 1938's earthquake.