

## **THERMAL STATE AND GRAVITY OF THE CHOOGARYUNG RIFT VALLEY, KOREA**

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HEAT FLOW, GRAVITY, SURFACE GEOLOGY, AND GEOCHEMISTRY HAVE BEEN INTEGRATED TO EVALUATE THE THERMAL STATE OF THE CHOOGARYUNG RIFT VALLEY, KOREA. THE GEOLOGY IS COMPOSED OF THREE KINDS OF ROCKS SUCH AS YEONCHEON SYSTEM, JURASSIC VOLCANIC ROCKS AND QUATERNARY JEONGOK BASALT. IT SEEMS TO BE THAT THERE ARE BASALTIC LAYERS OF 7-8M THICKNESS BELOW THE RIFT VALLEY BY RESISTIVITY SURVEYS. THERE ARE THREE VALLEYS AND FOUR MOUNTAINS IN THE DIRECTION OF NE-SW OR NNE-SSW WHICH ARE STRUCTURED BY THE GEOLOGICAL STRUCTURE. DIGITAL TERRAIN MODEL IS USEFUL FOR TERRAIN ANALYSIS. SIMPLE CONDUCTIVE THERMAL MODELS PREDICT A MAXIMUM ANOMALOUS HEAT FLOW AT SURFACE AFTER THE ERUPTION OF THE VOLCANIC ROCKS IN THE VALLEY. MODEL PREDICTION OF NEGLIGIBLE RESIDUAL HEAT FLOW AT THE PRESENT IS CONSISTENT WITH MEASURED HEAT FLOW IN THE RIFT VALLEY, WHICH IS INDISTINGUISHABLE FROM BACKGROUND KOREA HEAT FLOW. RESIDUAL GRAVITY IN THE RIFT VALLEY IS CHARACTERIZED BY A ROUGHLY DENSITY LOW RELATED TO THE SEDIMENTARY COVER. THE LOW VALUES OF THE NEGATIVE BOUGUER ANOMALIES REPRESENT THE HIGH ELEVATION TERRAIN. THE REGIONAL GRAVITY ANOMALIES DECREASE TOWARD THE EASTERN PART OF THE STUDY AREA. THE TRENDS OF VARIATIONS ARE ASSOCIATED WITH THE THERMOTECTONIC STRUCTURE BENEATH THE RIFT VALLEY.