Abstract
A combined gravimetric and geochronological interpretation of the Parguaza intrusion in the Guayana shield, southwestern Venezuela, indicates that there is a pattern of inverse cooling within this pluton. Based on a positive correlation between Rb/Sr whole rock apparent ages and residual Bouguer anomaly, density contrasts over the Parguaza intrusion are linked to temperature and crystallization of mineral phases. This hypothesis is supported by density measurements on hand samples and by independent geochemical evidence. A simple 2D gravity model is constrained by surface geology, Rb/Sr apparent ages (whole rock) and residual Bouguer anomalies. Gravimetric modeling implies a model of horsts and grabens that accounts for inverse zoning of the intrusion as a result of geological and age contrasts across the faults.

Keywords
Rapakivi granite, residual Bouguer anomaly, gravimetric modelling, cooling pattern, apparent ages.