

## Physical modeling of magma chamber of slamet volcano by means of satellite gravimetric data

<b>Title</b>	Physical modeling of magma chamber of slamet volcano by means of satellite gravimetric data
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<b>Abstract</b>	<p>Slamet Volcano (3,432 m) is the highest volcano in Central Java, Indonesia, with a weak explosive type of eruption compared to other active volcanoes. Designing the magma chamber model may help reveal the characteristics of Slamet Volcano. The modelling uses the gravimetric satellite data from GGMplus, which is best in spatial resolution compared to other satellite data, i.e. 220 m. Data processing begins with Bouguer correction and terrain correction and has resulted in complete Bouguer anomalies data, with values ranging from 11.068 – 117.451 mGal. Further, residual Bouguer anomalies data were obtained after data reduction to the horizontal surface and removal of regional anomalies data, to obtain values ranging from -67.569 – 38.808 mGal. The residual anomaly contour map shows the lowest anomalous value is under the volcanic cone at positions of 109.21967° E and 7.24281° S which is estimated to be the location of the magma chamber of Slamet Volcano. However, the inversion modeling resulting from the residual Bouguer anomalies data shows that the magma chamber of Slamet Volcano can be observed clearly at positions of 109.22053° E and 7.24719° S. The location of the magma chamber is not perfectly vertical under the volcanic cone but has a slight slope. The obtained model of the magma chamber has a relatively small volume and shallow depth, i.e. about 1 – 4 km. The obtained physical parameters of the magma chamber impact the characteristics of the eruption of Slamet Volcano which tend to be weak explosive.</p>
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