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## **Ellipse-approximated isopach approach for assessing ash fall deposit at the active Sakurajima volcano, Japan**

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In basins where volcanic ash has been deposited by volcanic eruption, it is known that subsequent rainfall has a high risk of causing a debris flow. Hence, when the major eruptions happen, there is a possibility to be occurred the debris flows that pose a significant threat to the people that live on or near the active volcanoes. Therefore, the rapid evaluation whether debris flows occur after the eruption is an important issue for the public safety. To release information that shows the area where is prone to occur debris flows due to the volcanic ash for the local people, it is crucial to produce the ash isopach maps. Hence, the objective of this study is to estimate the distribution of volcanic ash quickly with a simple method, the authors attempt to adopt the ellipse-approximated isopach (EAI) approach at the Sakurajima volcano that is one of the well-known active volcanos in the southern part of Japan. The ellipse-approximated isopach (EAI) approach uses few parameters and the limited observation data to estimate the distribution of volcanic ash. Therefore EAI is effective mean to assess the deposit quickly. The accuracy of the model is verified by the ground data that has not been used in the analysis. The results show a similar trend with each other. These ash fall isopach maps for estimating ash deposit and the spatial distribution discipline of ash can provide useful information for predicting the debris flow after the eruptions and contributing to hazard assessment and risk mitigation in the potentially affected regions.