



DAFTAR PUSTAKA

- Aber, J. S., Marzolff, I., Ries, J. B., & Aber, S. W., 2019, *Small-format aerial photography and UAS imagery: Principles, techniques and geoscience applications* (Second edition). Elsevier.
- Andaru, R., Rau, J.-Y., Syahbana, D. K., Prayoga, A. S., & Purnamasari, H. D., 2021, The use of UAV remote sensing for observing lava dome emplacement and areas of potential lahar hazards: An example from the 2017–2019 eruption crisis at Mount Agung in Bali. *Journal of Volcanology and Geothermal Research*, 415, 107255. <https://doi.org/10.1016/j.jvolgeores.2021.107255>
- Andreastuti, S. D., Alloway, B. V., & Smith, I. E. M., 2000, A detailed tephrostratigraphic framework at Merapi Volcano, Central Java, Indonesia: Implications for eruption predictions and hazard assessment. *Journal of Volcanology and Geothermal Research*, 100(1–4), 51–67. [https://doi.org/10.1016/S0377-0273\(00\)00133-5](https://doi.org/10.1016/S0377-0273(00)00133-5)
- Beauducel, F., Cornet, F.-H., Suharto, E., Duquesnoy, T., & Kasser, M., 2000, Constraints on magma flux from displacements data at Merapi volcano, Java, Indonesia. *Journal of Geophysical Research: Solid Earth*, 105(B4), 8193–8203. <https://doi.org/10.1029/1999JB900368>
- Belloni, V., Ravanelli, R., Nascetti, A., Di Rita, M., Mattei, D., & Crespi, M., 2019, py2DIC: A New Free and Open Source Software for Displacement and Strain Measurements in the Field of Experimental Mechanics. *Sensors*, 19(18), 3832. <https://doi.org/10.3390/s19183832>
- BPPTKG, B. G., 2009, Karakteristik Gunung Merapi. Web Badan Geologi-PVMBG BPPTKG <https://bpptkg.esdm.go.id/pub/page.php?id=9>
- Budi-Santoso, A., Lesage, P., Dwiyono, S., Sumarti, S., Subandriyo, Surono, Jousset, P., & Metaxian, J.-P., 2013, Analysis of the seismic activity associated with the 2010 eruption of Merapi Volcano, Java. *Journal of Volcanology and Geothermal Research*, 261, 153–170. <https://doi.org/10.1016/j.jvolgeores.2013.03.024>
- Calder, E. S., Luckett, R., Sparks, R. S. J., & Voight, B., 2002, Mechanisms of lava dome instability and generation of rockfalls and pyroclastic flows at Soufrière Hills Volcano, Montserrat. *Geological Society, London, Memoirs*, 21(1), 173–190. <https://doi.org/10.1144/GSL.MEM.2002.021.01.08>
- Camus, G., Gourgaud, A., Mossand-Berthommier, P.-C., & Vincent, P.-M., 2000, Merapi (Central Java, Indonesia): An outline of the structural and magmatological evolution, with a special emphasis to the major pyroclastic events. *Journal of Volcanology and Geothermal Research*, 100(1–4), 139–163. [https://doi.org/10.1016/S0377-0273\(00\)00135-9](https://doi.org/10.1016/S0377-0273(00)00135-9)
- Charbonnier, S. J., & Gertisser, R., 2009, Numerical simulations of block-and-ash flows using the Titan2D flow model: Examples from the 2006 eruption of Merapi Volcano, Java, Indonesia. *Bulletin of Volcanology*, 71(8), 953–959. <https://doi.org/10.1007/s00445-009-0299-1>
- Darmawan, H., Walter, T. R., Brotopuspito, K. S., Subandriyo, & I Gusti Made Agung Nandaka., 2018a, Morphological and structural changes at the Merapi lava dome monitored in 2012–15 using unmanned aerial vehicles (UAVs). *Journal of Volcanology and Geothermal Research*, 349, 256–267. <https://doi.org/10.1016/j.jvolgeores.2017.11.006>
- Darmawan, H., Walter, T. R., Troll, V. R., & Budi-Santoso, A., 2018b, Dome instability at Merapi volcano identified by drone photogrammetry and numerical modeling [Preprint]. *Volcanic Hazards*. <https://doi.org/10.5194/nhess-2018-120>



- Darmawan, H., Yuliantoro, P., Rakhman, A., Budi Santoso, A., Humaida, H., & Suryanto, W., 2020, Dynamic velocity and seismic characteristics of gravitational rockfalls at the Merapi lava dome. *Journal of Volcanology and Geothermal Research*, 404, 107010. <https://doi.org/10.1016/j.jvolgeores.2020.107010>
- De Beni, E., Cantarero, M., & Messina, A., 2019, UAVs for volcano monitoring: A new approach applied on an active lava flow on Mt. Etna (Italy), during the 27 February–02 March 2017 eruption. *Journal of Volcanology and Geothermal Research*, 369, 250–262. <https://doi.org/10.1016/j.jvolgeores.2018.12.001>
- Espinosa-Ortega, T., Budi-Santoso, A., Sulistiyan, Win, N.-T.-Z., Widiwijayanti, C., & Costa, F., 2022, Probabilistic analysis to correlate seismic data with lava extrusion phases at Merapi volcano (Indonesia). *Journal of Volcanology and Geothermal Research*, 426, 107537. <https://doi.org/10.1016/j.jvolgeores.2022.107537>
- Gertisser, R., Charbonnier, S. J., Keller, J., & Quidelleur, X., 2012, The geological evolution of Merapi volcano, Central Java, Indonesia. *Bulletin of Volcanology*, 74(5), 1213–1233. <https://doi.org/10.1007/s00445-012-0591-3>
- Gomez, C., 2014, Digital photogrammetry and GIS-based analysis of the biogeomorphological evolution of Sakurajima Volcano, diachronic analysis from 1947 to 2006. *Journal of Volcanology and Geothermal Research*, 280, 1–13. <https://doi.org/10.1016/j.jvolgeores.2014.04.015>
- Granados-Bolaños, S., Quesada-Román, A., & Alvarado, G. E., 2021, Low-cost UAV applications in dynamic tropical volcanic landforms. *Journal of Volcanology and Geothermal Research*, 410, 107143. <https://doi.org/10.1016/j.jvolgeores.2020.107143>
- Harnett, C. E., & Heap, M. J., 2021, Mechanical and topographic factors influencing lava dome growth and collapse. *Journal of Volcanology and Geothermal Research*, 420, 107398. <https://doi.org/10.1016/j.jvolgeores.2021.107398>
- Harnett, C. E., Thomas, M. E., Calder, E. S., Ebmeier, S. K., Telford, A., Murphy, W., & Neuberg, J., 2019, Presentation and analysis of a worldwide database for lava dome collapse events: The Global Archive of Dome Instabilities (GLADIS). *Bulletin of Volcanology*, 81(3), 16. <https://doi.org/10.1007/s00445-019-1276-y>
- Humaida, H., Santoso, A. B., Subandriyo, J., Aisyah, N., Putra, R., & Sulistyani., 2018, Kenaikan Status Aktivitas Gunung Merapi 21 Mei 2018. *Buletin Merapi, Edisi Kusus 2018(Krisis 2018)*, 1–11.
- Illowsky, B., & Dean, S., 2018, Introductory Statistics. 2018, 913.
- Itoh, H., Takahama, J., Takahashi, M., & Miyamoto, K., 2000, Hazard estimation of the possible pyroclastic flow disasters using numerical simulation related to the 1994 activity at Merapi Volcano. *Journal of Volcanology and Geothermal Research*, 100(1–4), 503–516. [https://doi.org/10.1016/S0377-0273\(00\)00153-0](https://doi.org/10.1016/S0377-0273(00)00153-0)
- Jordan, B., 2019, Collecting field data in volcanic landscapes using small UAS (sUAS)/drones. *Journal of Volcanology and Geothermal Research*, 381(5), 231
- Kelfoun, K., Santoso, A. B., Latchimy, T., Bontemps, M., Nurdien, I., Beauducel, F., Fahmi, A., Putra, R., Dahamna, N., Laurin, A., Rizal, M. H., Sukmana, J. T., & Gueugneau, V., 2021, Growth and collapse of the 2018–2019 lava dome of Merapi volcano. *Bulletin of Volcanology*, 83(2), 8. <https://doi.org/10.1007/s00445-020-01428-x>
- Komorowski, J.-C., Jenkins, S., Baxter, P. J., Picquot, A., Lavigne, F., Charbonnier, S., Gertisser, R., Preece, K., Cholik, N., Budi-Santoso, A., & Surono., 2013, Paroxysmal dome explosion during the Merapi 2010 eruption: Processes and facies relationships of associated high-energy pyroclastic density currents. *Journal of*



Lavallée, Y., Varley, N. R., Alatorre-Ibargüengoitia, M. A., Hess, K.-U., Kueppers, U., Mueller, S., Richard, D., Scheu, B., Spieler, O., & Dingwell, D. B., 2012, Magmatic architecture of dome-building eruptions at Volcán de Colima, Mexico. *Bulletin of Volcanology*, 74(1), 249–260. <https://doi.org/10.1007/s00445-011-0518-4>

Pallister, J. S., Schneider, D. J., Griswold, J. P., Keeler, R. H., Burton, W. C., Noyles, C., Newhall, C. G., & Ratdomopurbo, A., 2013, Merapi 2010 eruption—Chronology and extrusion rates monitored with satellite radar and used in eruption forecasting. *Journal of Volcanology and Geothermal Research*, 261, 144–152. <https://doi.org/10.1016/j.jvolgeores.2012.07.012>

Putra, R., Harijoko, A., dan Santoso, A. B, 2022, Monitoring lava dome extrusion of Merapi Volcano during 2018-2019, using low-cost UAV application. *IOP Conference Series: Earth and Environmental Science*, 1071(1), 012001. <https://doi.org/10.1088/1755-1315/1071/1/012001>

Ratdomopurbo, A., Beauducel, F., Subandriyo, J., Agung Nandaka, I. G. M., Newhall, C. G., Suharna, Sayudi, D. S., Suparwaka, H., & Sunarta., 2013, Overview of the 2006 eruption of Mt. Merapi. *Journal of Volcanology and Geothermal Research*, 261, 87–97. <https://doi.org/10.1016/j.jvolgeores.2013.03.019>

Siswidjoyo, S., Suryo, I., & Yokoyama, I., 1995, Magma eruption rates of Merapi volcano, Central Java, Indonesia during one century (1890–1992). *Bulletin of Volcanology*, 57(2), 111–116. <https://doi.org/10.1007/BF00301401>

Solikhin, A., Thouret, J.-C., Liew, S. C., Gupta, A., Sayudi, D. S., Oehler, J.-F., & Kassouk, Z., 2015, High-spatial-resolution imagery helps map deposits of the large (VEI 4) 2010 Merapi Volcano eruption and their impact. *Bulletin of Volcanology*, 77(3), 20. <https://doi.org/10.1007/s00445-015-0908-0>

Sulpizio, P., D., D.M., D., & D., S., 2014, Pyroclastic density currents: State of the art and perspectives. *Journal of Volcanology and Geothermal Research*, 283, 36–65. <https://doi.org/10.1016/j.jvolgeores.2014.06.014>

Algaly, T.A., 2017, Aplikasi Digital Image Correlation (DIC) Untuk Pemantauan Perubahan Kubah Lava Gunung Merapi (Doctoral dissertation, Universitas Gadjah Mada).

Voight, B., Constantine, E. K., Siswidjoyo, S., & Torley, R., 2000 Historical eruptions of Merapi Volcano, Central Java, Indonesia, 1768–1998. *Journal of Volcanology and Geothermal Research*, 100(1–4), 69–138. [https://doi.org/10.1016/S0377-0273\(00\)00134-7](https://doi.org/10.1016/S0377-0273(00)00134-7)

Voight, B., & Elsworth, D., 2000, Instability and collapse of hazardous gas-pressurized lava domes. *Geophysical Research Letters*, 27(1), 1–4. <https://doi.org/10.1029/1999GL008389>

Walter, T. R., Harnett, C. E., Varley, N., Bracamontes, D. V., Salzer, J., Zorn, E. U., Bretón, M., Arámbula, R., & Thomas, M. E. (2019). Imaging the 2013 explosive crater excavation and new dome formation at Volcán de Colima with TerraSAR-X, time-lapse cameras and modelling. *Journal of Volcanology and Geothermal Research*, 369, 224–237. <https://doi.org/10.1016/j.jvolgeores.2018.11.016>

Wirakusumah, A.D., H.. Loebis, H.. Juwarna, Effendi, A.C., A.. Sudradjat and L.. Pardyanto, 1989, Peta geologi Gunungapi Merapi. Direktorat vulkanologi.

Zobin, V. M., 2012, *Introduction to volcanic seismology* (2nd ed). Elsevier.

Zorn, Edgar U., Walter, Thomas R., Johnson, Jeffrey B., & Mania, René., 2020, *High-resolution photogrammetry data of the Santiaguito lava dome collected by UAS surveys* [Data set]. GFZ Data Services. <https://doi.org/10.5880/GFZ.2.1.2020.001>