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DAFTAR PUSTAKA

Campello, R. J. G. B., Moulavi, D., & Sander, J. (2013). Density-based clustering based on hierarchical density estimates. Lecture Notes in Computer Science, 7819, 160–172.

Campello, R. J. G. B., Moulavi, D., Zimek, A., & Sander, J. (2015). Hierarchical density estimates for data clustering, visualization, and outlier detection. ACM Transactions on Knowledge Discovery from Data, 10(1), 5:1–5:51.

Chakraborty, P. P., & Khan, P. K. (2009). Cenozoic geodynamic evolution of the Andaman–Sumatra subduction margin: Current understanding. Island Arc, 18(1), 184–200.

Chandrasekharam, D., Santo, A. P., Capaccioni, B., Vaselli, O., Alam, M. A., Manetti, P., & Tassi, F. (2009). Volcanological and petrological evolution of Barren Island (Andaman Sea, Indian Ocean). Journal of Asian Earth Sciences, 35(5), 469–487.

Christensen, U. R., & Hofmann, A. W. (1994). Segregation of subducted oceanic crust in the convecting mantle. Journal of Geophysical Research: Solid Earth, 99(B10), 19867–19884.

Comon, P. (1994). Independent component analysis, a new concept? Signal Processing, 36(3), 287–314. https://doi.org/10.1016/0165-1684(94)90029-9

Cover, T. M., & Thomas, J. A. (2006). Elements of Information Theory (2nd ed.). John Wiley & Sons.

Crow, M. J., & Barber, A. J. (2005). Map: Simplified geological map of Sumatra. Geological Society, London, Memoirs, 31(1), NP.2.

Curray, J. R. (1989). The Sunda Arc: A model for oblique plate convergence. Netherlands Journal of Sea Research, 24(2–3), 131–140.

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Curray, J. R. (2005). Tectonics and history of the Andaman Sea region. Journal of Asian Earth Sciences, 25(1), 187–232.

Dasgupta, R., & Hirschmann, M. M. (2010). The deep carbon cycle and melting in Earth's interior. Earth and Planetary Science Letters, 298(1–2), 1–13.

De Maisonneuve, C. B., & Bergal-Kuvikas, O. (2020). Timing, magnitude and geochemistry of major Southeast Asian volcanic eruptions: Identifying tephrochronologic markers. Journal of Quaternary Science, 35(1–2), 272–287.

DIGIS Team. (2021). GEOROC Compilation: Convergent Margins [Data set]. GRO.data.

Forsyth, D. W., & Uyeda, S. (1975). On the relative importance of the driving forces of plate motion. Geophysical Journal International, 43(1), 163–200.

Gill, J. B. (1981). Orogenic Andesites and Plate Tectonics. Springer.

Hall, R. (2012). Late Jurassic–Cenozoic reconstructions of the Indonesian region and the Indian Ocean. Tectonophysics, 570–571, 1–41.

Hall, R., & Smyth, H. R. (2008). Cenozoic arc processes in Indonesia: Identification of the key influences on the stratigraphic record in active volcanic arcs. In A. E. Draut, P. D. Clift, & D. W. Scholl (Eds.), Formation and Applications of the Sedimentary Record in Arc Collision Zones (Geological Society of America Special Paper 436, pp. 27–54). Geological Society of America.

Harker, A. (1909). The Natural History of Igneous Rocks. Methuen & Co.

Hyvärinen, A. (1998). New approximations of differential entropy for independent component analysis and projection pursuit. In Advances in Neural Information Processing Systems, 10, 273–279.

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Hyvärinen, A. (1999). Fast and robust fixed-point algorithms for independent component analysis. IEEE Transactions on Neural Networks, 10(3), 626–634.

Hyvärinen, A., & Oja, E. (2000). Independent component analysis: Algorithms and applications. Neural Networks, 13(4–5), 411–430.

Irvine, T. N., & Baragar, W. R. A. (1971). A guide to the chemical classification of the common volcanic rocks. Canadian Journal of Earth Sciences, 8(5), 523–548.

Iwamori, H., Yoshida, K., Nakamura, H., Kuwatani, T., Hamada, M., Haraguchi, S., & Ueki, K. (2017). Classification of geochemical data based on multivariate statistical analyses: Complementary roles of cluster, principal component, and independent component analyses. Geochemistry, Geophysics, Geosystems, 18, 994–1012. https://doi.org/10.1002/2016GC006663

Katili, J. A. (1989). Evolution of the Southeast Asian arc system. Tectonophysics, 161(3–4), 215–227.

Kerrick, D. M., & Connolly, J. A. D. (2001). Metamorphic devolatilization of subducted oceanic metabasalts: Implications for seismicity, arc magmatism and volatile recycling. Earth and Planetary Science Letters, 189(1–2), 19–29.

Kurnio, H. (2019). Analisis Geokimia Batuan Vulkanik di Sumatera Barat. Jurnal Geologi dan Sumberdaya Mineral, 19(2), 111–122.

Lay, T. (2011). The Great Sumatra–Andaman earthquake of 26 December 2004. Earth and Planetary Science Letters, 310(3–4), 329–340.

Le Bas, M. J., Le Maitre, R. W., Streckeisen, A., & Zanettin, B. (1986). A chemical classification of volcanic rocks based on the total alkali-silica diagram. Journal of Petrology, 27(3), 745–750.

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McCaffrey, R. (2009). The tectonic framework of the Sumatran subduction zone. Annual Review of Earth and Planetary Sciences, 37, 345–366.

McInnes, L., Healy, J., & Astels, S. (2017). hdbscan: Hierarchical density based clustering. Journal of Open Source Software, 2(11), 205.

Miyashiro, A. (1974). Volcanic rock series in island arcs and active continental margins. American Journal of Science, 274(4), 321–355.

Moeremans, R. E., & Singh, S. C. (2015). Fore-arc basin deformation in the Andaman-Nicobar segment of the Sumatra-Andaman subduction zone: Insight from high-resolution seismic reflection data. Tectonics, 34(8), 1736–1750.

Moulavi, D., Jaskowiak, P. A., Campello, R. J. G. B., Zimek, A., & Sander, J. (2014). Density-based clustering validation. Proceedings of the 2014 SIAM International Conference on Data Mining, 839–847.

Natawidjaja, D. H. (2018). Geologi dan potensi kegempaan zona subduksi Sumatra. Badan Geologi, Kementerian ESDM.

Pearce, J. A., & Peate, D. W. (1995). Tectonic implications of the composition of volcanic arc magmas. Annual Review of Earth and Planetary Sciences, 23, 251–285.

Petrelli, M. (2024). Machine learning in petrology: State-of-the-art and future perspectives. Journal of Petrology, 65(5), egae036.

Reimann, C., & Filzmoser, P. (2000). Normal and lognormal data distribution in geochemistry: Death of a myth. Consequences for the statistical treatment of geochemical and environmental data. Environmental Geology, 39(9), 1001–1014.

Rohiman, A., Prijanto, D., Prabowo, A., Ratdomopurbo, A., Setiawan, R., Effendi, M., & Wahyudi, E. (2019). Geochemical characteristics of volcanic rocks

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from Mt. Masurai's Caldera, Jambi, Indonesia. Journal of Physics: Conference Series, 1204, 012070.

Rollinson, H., & Pease, V. (2021). Using Geochemical Data: To Understand Geological Processes (2nd ed.). Cambridge University Press.

Sieh, K., & Natawidjaja, D. H. (2000). Neotectonics of the Sumatran fault, Indonesia. Journal of Geophysical Research: Solid Earth, 105(B12), 28295–28326.

Stern, R. J. (2002). Subduction zones. Reviews of Geophysics, 40(4), 1012.

Sun, S. S., & McDonough, W. F. (1989). Chemical and isotopic systematics of oceanic basalts: Implications for mantle composition and processes. In Magmatism in the Ocean Basins, Geological Society Special Publication No. 42.

Tatsumi, Y., & Eggins, S. (1995). Subduction Zone Magmatism. Blackwell Science.

Ueki, K., Hino, H., & Kuwatani, T. (2018). Geochemical discrimination and characteristics of magmatic tectonic settings: A machine-learning-based approach. Geochemistry, Geophysics, Geosystems, 19(4), 1327–1347.

Wilson, M. (1989). Igneous Petrogenesis: A Global Tectonic Approach. Unwin Hyman.

Winter, J. D. (2010). Principles of Igneous and Metamorphic Petrology (2nd ed.). Pearson.

Zulkarnain, I. (2011). Petrogenesis dan Karakterisasi Batuan Vulkanik di Busur Sunda. Buletin Geologi.