

References

- De Grave, J., Zhimulev, F.I., Glorie, S., Kuznetsov, G.V., Evans, N., Vanhaecke, F., & McInnes, B. (2016). Late Palaeogene emplacement and late Neogene Quaternary exhumation of the Kuril island-arc root (Kunashir island) constrained by multi-method thermochronometry. *Geoscience Frontiers*, 7, 211–220.
- Furukata, C., Nakagawa, M., Hirose, W., & Adachi, Y. (2010). Geochemical character of Early-Middle Miocene volcanic rocks from central Hokkaido: Characterization of magma-related back-arc spreading at the margin of the volcanic field. *The Journal of the Geological Society of Japan*, 116, 199–218 (in Japanese with English abstract).
- Hanyu, T., Tatsumi, Y., Nakai, S., Chang, Q., Miyazaki, T., Sato, K., Tani, K., Shibata, T., & Yoshida, T. (2006). Contribution of slab melting and slab dehydration to magmatism in the NE Japan arc for the last 25 Myr: Constraints from geochemistry. *Geochemistry Geophysics Geosystems*, 7, Q08002, <https://doi.org/10.1029/2005GC001220>.
- Kamiyama, H., Nakajima, T., & Kamioka, H. (2007). Magmatic stratigraphy of the tilted Tottabetsu plutonic complex, Hokkaido, north Japan: Magma chamber dynamics and pluton construction. *The Journal of Geology*, 115, 295–314.
- Kimura, G. (1981) Tectonic evolution and stress field in the southwestern margin of the Kurile Arc. *The Journal of the Geological Society of Japan*, 87, 757–768 (in Japanese with English abstract).
- Kimura, G. (1986). Oblique subduction and collision: Forearc tectonics of the Kuril Arc. *Geology*, 14, 404–407.
- Kimura, G. (1994) The latest Crataceous-early Paleogene rapid growth of accretionary complex and exhumation of high pressure series metamorphic rocks in northwestern Pacific margin. *Journal of Geophysical Research*, 99, B11, 22147–22164.

- Kimura, G. (1996). Collision orogeny at arc-arc junctions in the Japanese Islands. *Island Arc*, 5, 262–275.
- Le Maitre, W.D. (2002). *Igneous Rocks: A Classification and Glossary of Terms*. Cambridge University Press.
- Maeda, J. (1990). Opening of the Kuril Basin deduced from the magmatic history of central Hokkaido, North Japan. *Tectonophysics*, 174, 235–255.
- Maeda, J., & Kagami, H. (1996). Interaction of a spreading ridge and an accretionary prism: Implications from MORB magmatism in the Hidaka magmatic zone, Hokkaido, Japan. *Geology*, 24, 31–34.
- Maeda, J., & Saito, K. (1997) Role of mantle-derived primitive magma for generation of continental crust: Inferences from the Hidaka magmatic belt, central Hokkaido. The Memoirs of Geological Society of Japan, No. 47, 75–85 (in Japanese with English abstract).
- Miyashiro, A. (1974). Volcanic rock series in island arcs and active continental margins. *American Journal of Science*, 274, 321–335.
- Okamura, S. Yahata, M., nishido, H., Ibusuki, A., Yokoi, S., Yonejima, M., Imayama, T., & Maeda, J. (2010) K–Ar ages and petrology of the Takinoue stage volcanic rocks. In central Hokkaido, Japan: Geochemistry of volcanic rocks that from a shallow reservoir in the Yufutsu Oil and Gas Field. *The Journal of the Geological Society of Japan*, 116, 181–198 (in Japanese with English abstract).
- Pearce, J. A., Harris, N. B. W., & Tindle, A. G. (1984). Trace element discrimination diagrams for the tectonic interpretation of granitic rocks. *Journal of Petrology*, 25, 956–983
- Research Group of Deep Structure of Island Arcs (2009). On the distribution of deep earthquakes in the Japanese islands and surrounding areas—The minute investigation of the Wadati-Benioff zone-. *Earth Science (Chikyu Kagaku)*, 63, 9–27 (in Japanese with English abstract).

- Ryan, W. B. F., Carbotte, S.M., Coplan, J., O'Hara, S., Melkonian, A., Arko, R., Weissel, R.A., Ferrini, V., Goodwillie, A., Nitsche, F., Bonczkowski, J., & Zemsky, R. (2009). Global Multi-Resolution Topography (GMRT) synthesis data set, *Geochemistry Geophysics Geosystems*, 10, Q03014. <https://doi.org/10.1029/2008GC002332>
- Suetake, S. (1997). Heterogeneous structures in an plutonic complex: inferences from the Tottabetsu plutonic complex, the Main zone of the Hidaka metamorphic belt, Hokkaido. The Memoirs of Geological Society of Japan, No. 47, 57–74 (in Japanese with English abstract).
- Sun, S.-S., & McDonough, W. F. (1989). Chemical and isotopic systematics of oceanic basalts: implications for mantle compositions and processes. Geological Society of London Special Publication 42, 313–345.
- Tatsumi, Y., Otofuji, Y., Matsuda, T., & Honda, S. (1989). Opening of the Sea of Japan back-arc basin by asthenospheric injection. *Tectonophysics*, 166, 317–329.
- Watanabe, Y., Fujibayashi, N., Nakagawa, M., & Kagami, H. (1993). K–Ar age, stratigraphic correlation and chemical composition of Early Miocene volcanic rocks at Umai Hill and Yubari Coal Field in central Hokkaido. *Journal of Mineralogy, Petrology and Economic Geology*, 88, 295–306 (in Japanese with English abstract).
- Werner, R., Baranov, B., Hoernle, K., van den Bogaard, P., Hauff, F., & Tararin, I. (2020). Discovery of Ancient Volcanoes in the Okhotsk Sea (Russia): New Constraints on the Opening History of the Kurile Back Arc Basin. *Geosciences*, 10, 442.
<https://doi.org/10.3390/geosciences10110442>
- Yamasaki, T., Shimoda, G., Tani, K., Maeda, J., & Nanayama, F. (2021). Subduction of the Izanagi–Pacific Ridge–transform intersection at the northeastern end of the Eurasian Plate. *Geology*, 49, 952–957. <https://doi.org/10.1130/G48611.1>