Bryan Marfito

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RESEARCH INTERESTS

I use geodetic methods, including Interferometric Synthetic Aperture Radar (InSAR), to investigate the characteristics of faults responsible for destructive earthquakes in Asia. I also analyze post-earthquake deformation observed by InSAR and and Global Navigation Satellite System (GNSS) to better understand fault mechanics. My goal is to contribute to advances in tectonics and earthquake science that can help improve societal resilience to damaging earthquakes.

APPOINTMENTS

Graduate Student, Asian School of the Environment, Feb 2022 – present
Nanyang Technological University

Science Research Specialist I, Philippine Institute of Volcanology and Seismology Nov 2014 – Dec 2021

EDUCATION

Nanyang Technological University, Singapore Feb 2022 – present

- Ph.D., major in Environmental Earth System Science,
  Asian School of the Environment
- Supervisor: Sang-Ho Yun, PhD

University of the Philippines, Diliman Aug 2018 – Feb 2022

- M.S., major in Geology, National Institute of Geological Sciences
- Thesis: Tectonic Geomorphology of the Philippine Fault in Surigao Strait
- Supervisor: Mario A. Aurelio, PhD

University of the Philippines, Diliman

- B.S., major in Geology, National Institute of Geological Sciences Jun 2009 – Apr 2014

WORK EXPERIENCE

Philippine Institute of Volcanology and Seismology Nov 2014 – Dec 2021

- Mapped the offshore extension of the Philippine Fault along Calauag Bay, Lopez Bay, Cataingan Bay, Naro Bay, and Masbate Pass
- Mapped and segmentized the Philippine Fault in Surigao Strait
- Generated InSAR deformation maps and Coulomb Stress transfer maps of moderate to large onland magnitude earthquakes (M_W 6 to 7) in the Philippines from 2019 to 2021

PUBLICATIONS

- **Marfito, B.**, Mallick, R., Perry, M., Hill, E., Yun, S.H. "Rheology of the Lower Crust Underneath Himalaya Revealed by A New Method", in prep.
- **Marfito, B.,** Ainscoe, E., Sopaci, E., Salman, R., Shnizai, Z., Burgmann, R., Yun, S.H. Delayed Triggering in the 2023 Herat, Afghanistan Earthquake Sequence Controlled by Fault Orientation and Overlap. (In prep.)

- **Marfito, B.,** Salman R., Bürgmann, R., Liang, C., Wang, K., Yun, S.H. Investigating the Origin of Shallow Slip Deficit in the 2022 Mw 6.0 Khōst, Afghanistan Earthquake. (In prep.)
- He, L., Salman, R., **Marfito, B.**, Feng, G., Jiang, H., Wang, W., et al. (2026). Coulomb Pre-Stress Changes Modulate Coseismic Rupture Kinematics of the 2025 Mw7.7 Myanmar Earthquake Revealed by Space Geodesy. *Geophysical Research Letters*, *53*(3), e2025GL120587. https://doi.org/https://doi.org/10.1029/2025GL120587
- Rimando, R. E., Llamas, D. C. E., **Marfito, B. J.**, & Garduque, R. J. (2025). Seasonal and Episodic Variation of Aseismic Creep Displacement Along the West Valley Fault, Philippines. *GeoHazards*, *6*(3). https://doi.org/10.3390/geohazards6030055
- Llamas, D. C. E., **Marfito, B. J.**, Dela Cruz, R., & Aurelio, M. A. (2024). Surface Rupture and Fault Characteristics Associated With the 2020 Magnitude (MW) 6.6 Masbate Earthquake, Masbate Island, Philippines. *Tectonics*, *43*(9), e2023TC008106. https://doi.org/https://doi.org/10.1029/2023TC008106
- Flores, P. C. M., Siringan, F. P., Mateo, Z. R. P., **Marfito, B. J.**, Sarmiento, K. J. S., Abigania, M. I. T., et al. (2023). Shallow structures, interactions, and recurrent vertical motions of active faults in Lingayen Gulf, Philippines. *Journal of Asian Earth Sciences: X*, *9*, 100152. https://doi.org/https://doi.org/10.1016/j.jaesx.2023.100152
- **Marfito, B. J.**, Llamas, D. C. E., & Aurelio, M. A. (2022). Geometry and Segmentation of the Philippine Fault in Surigao Strait . *Frontiers in Earth Science* . Retrieved from https://www.frontiersin.org/article/10.3389/feart.2022.799803
- Sarmiento, K. J. S., Aurelio, M. A., Flores, P. C. M., Carrillo, A. D. V, **Marfito, B. J.**, Abigania, M. I. T., et al. (2022). Seafloor Structures and Static Stress Changes Associated With Two Recent Earthquakes in Offshore Southern Batangas, Philippines . *Frontiers in Earth Science* . Retrieved from https://www.frontiersin.org/article/10.3389/feart.2021.801670

CONFERENCES & PRESENTATIONS

- **Marfito, B.**, Ainscoe E., Sopaci, E., Salman, R., Shnizai, Z., Yun, S.H., Delayed Triggering in the 2023 Herat, Afghanistan Earthquake Sequence Controlled by Fault Orientation and Overlap, FRINGE 2026, Submitted
- **Marfito, B.**, Ainscoe, E., Salman, R., Sopaci, E., Shnizai, Z., Yun, S.H., Cascading Fault Ruptures Drive The 2023 Afghanistan Earthquake Sequence, ACES 2025, November 3 – 7, 2025
- **Marfito, B.**, Salman R., Way, L., Liang, C., Wang, K., Bürgmann, R., and Yun, S.H., Source fault characteristics of the 21 June 2022 M_W6.0 Afghanistan earthquake, ACES 2023, February 28 – March 4, 2023