



Kyoko S. KATAOKA, Ph.D.

Associate Professor

Program: Environmental Science and Technology

Area: Natural Disaster and Environmental Science

Research Institute for Natural Hazards and Disaster Recovery

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Professional Expertise

Dr. Kataoka's research focus is on modern and ancient (Pliocene to Holocene) volcanic sedimentary systems in Japan, New Zealand, Philippines, and Italy with multidisciplinary views and methods of sedimentology, volcanology and geomorphology. She has also acted as official reviewer and associate editor in several international and domestic journals since 2002.

Research Fields of Interest

Research area: Volcaniclastic Sedimentology, Lahar and Tephra Studies, Fluvial Geomorphology, Neogene-Quaternary Geology, Natural Hazard Science

Research topics: 1) Hydrological volcaniclastic resedimentation (lahars) and assessments of associated volcanic hazards; 2) Sedimentology and geomorphology of catastrophic volcanogenic floods; 3) Applications of ground penetrating radar (GPR) survey on volcanic areas; 4) Volcano-snow/water interaction: hydrology at snow-clad volcanoes; 5) Fluvial terrace and alluvial fan formation linked to volcanic processes; 6) Caldera forming eruption aftermath; 7) Submarine and sublacustrine eruptions: processes and mechanism; 8) Distal volcaniclastic resedimentation and redistribution in non-marine/marine settings

Education

2002: Ph.D. in Geology, Osaka City University, Japan

1998: M.Sc. in Geology, Osaka City University, Japan

1996: B.Sc. in Geology, Osaka City University, Japan

Professional Societies and Activities

Membership: 1) Geological Society of America, 2) Geological Society of Japan, 3) International Association for Sedimentologists, 4) International Association of Volcanology and Chemistry of the Earth's Interior, 5) Japan Association for Quaternary Research (Editorial Board Member), 6) Society for Sedimentary Geology, 7) Sedimentological Society of Japan (Steering Committee Member, Chief of Planning Committee), 8) Volcanological Society of Japan

Journal reviewer: 1) Bulletin of Volcanology, 2) Earth Surface Processes and Landforms, 3) Geological Society of America Bulletin, 4) Geomorphology, 5) International Journal of Earth Sciences, 6) IAS Special Publication, 7) Journal of Mountain Science, 8) Journal of South American Earth Sciences, 9) Journal of Volcanology and Geothermal Research, 10) New Zealand Journal of Geology and Geophysics, 11) Sedimentary Geology, 12) Sedimentology, 13) Quaternary International, 14) Quaternary Research, and other 6 Japanese journals.

Awards

1. Best paper award, Sedimentological Society of Japan
2. Best paper award, Japan Association for Quaternary Research

Major Publications

Papers

- [1] **Kataoka, K.S.**, Urabe, A., and Nagahashi, Y. (2016) Millennial-scale reworking of tephra in alluvial to shallow marine settings: distinguishing pseudo-isochrons from genuine ones. *Quaternary International*, v. 397, p. 173-193.
- [2] **Kataoka, K.S.**, Kamino, N., Nagahashi, Y., Kimura, K. (2015) Stratigraphy, chronology and depositional processes of lahar deposits in the Sukawa River System, Adataro volcano, northeast Japan. *Bulletin of Volcanological Society of Japan* v. 60, p. 461-475.
- [3] Cassidy, M., et al. (2015) Rapid onset of mafic magmatism facilitated by volcanic edifice collapse. *Geophysical Research Letters*, v. 42, p. 4778-4785.
- [4] **Kataoka, K.S.** and Nagahashi, Y., and Ono, E. (2015) Reworking and mixing of tephra derived from multiple eruptive sources, the Iwaki River catchment, Tsugaru Plain, northeast Japan. *The Quaternary Research*, v. 54, p. 21-29.
- [5] Minami, Y., Ohba, T., Hayashi, S., and **Kataoka, K.S.** (2015) Depositional processes and temporal component-change of lahar deposits at the northern foot of Chokai volcano, NE Japan. *Journal of Volcanological Society of Japan*, v. 60, p. 1-16.
- [6] Le Friant, A., et al. (2015) Submarine record of volcanic island construction and collapse in the Lesser Antilles arc: First scientific drilling of submarine volcanic island landslides by IODP Expedition 340. *Geochemistry, Geophysics, Geosystems*, v. 16, p. 420-442.
- [7] **Kataoka, K.S.** and Nagahashi, Y. (2014) Tephrology (Part 6): Methods of description for medial to distal tephra beds. *The Quaternary Research*, v. 53, p. 323-329.
- [8] **Kataoka, K.S.** and Nagahashi, Y. (2014) Tephrology (Part 3): Reworking and resedimentation of tephra. *The Quaternary Research*, v. 53, p. 175-183.
- [9] Tsukamoto, S., **Kataoka, K.S.**, Oguchi, T., Murray, A.S., and Komatsu, G. (2014) Luminescence dating of scoria fall and lahar deposits from Somma-Vesuvius, Italy. *Quaternary Geochronology*, v. 20, p. 39-50.
- [10] Wall-Palmer, D. et al. (2014) Late Pleistocene stratigraphy of IODP Site U1396 and compiled chronology offshore of south and south west Montserrat, Lesser Antilles. *Geochemistry, Geophysics, Geosystems (G3)*, v. 15, p. 3000-3020
- [11] Urabe, A. and **Kataoka, K.S.** (2013) Correlation of tephra beds in peaty bog sediments on the summit of Mt. Naebasan, central Japan. *The Quaternary Research*, v. 52, p. 241-254.
- [12] Tsukamoto, S., **Kataoka, K.S.** and Miyabuchi, Y. (2013) Luminescence dating of volcanogenic outburst flood sediments from Aso volcano and tephric loess deposits, southwest Japan. *Geochronometria*, v.40, p 294-303.
- [13] **Kataoka, K.S.** and Nagahashi, Y. (2012) A linkage between source volcanoes and alluvial basins on the basis of facies and thickness variation of distal tephra beds, Plio-Pleistocene Second Setouchi Supergroup, central Japan. *Journal of Geological Society of Japan*.
- [14] Gomez, C., **Kataoka, K.S.**, and Tanaka K. (2012) Large-scale internal structure of the Sanbongi Fan- Towada Volcano, Japan: Putting the theory to the test, using GPR on volcanoclastic deposits. *Journal of Volcanology and Geothermal Research*, v. 229-230, p. 44-49.
- [15] Ono, E., **Kataoka, K.S.**, Umitsu, M., and Satoguchi, Y. (2012) Impact of lahar on sedimentary environmental changes in the central Tsugaru Plain after the AD 915 eruption of Towada volcano, northeast Japan. *The Quaternary Research*, v. 51, p. 317-330.
- [16] Manga, M., et al. (2012) Heatflow in the Lesser Antilles island arc and adjacent back arc Grenada basin. *Geochemistry, Geophysics, Geosystems (G3)*, v. 13, Q08007, doi:10.1029/2012GC004260
- [17] **Kataoka, K.S.** (2011) Geomorphic and sedimentary evidences of a gigantic outburst flood from Towada caldera after the 15 ka Towada-Hachinohe ignimbrite eruption, northeast Japan. *Geomorphology*, v. 125, p. 11-26.
- [18] Urabe, A., Fujimoto, Y., and **Kataoka, K.S.** (2011) Influence of a volcanogenic flood event on alluvial depositional system, the Holocene Echigo Plain, northeast Japan. *Journal of Geological Society of Japan*, v. 117, 483-494.
- [19] **Kataoka, K.S.**, Manville, V., Nakajo, T., and Urabe, A. (2009) Impacts of explosive volcanism on distal alluvial sedimentation: examples from the Pliocene—Holocene volcanoclastic successions of Japan. *Sedimentary Geology*, v.220, p.306-317.
- [20] **Kataoka, K.S.**, Urabe, A., Manville, V, and. Kajiyama, A. (2008) Breakout flood from an ignimbrite-dammed valley after the 5 ka Numazawako eruption, northeast Japan. *Geological Society of America, Bulletin*, v. 120, p. 1233-1247.
- [21] **Kataoka, K.S.** and Manville, V. (2007) Breakout flood from Crater Lake of Ruapehu volcano, 18th March 2007, New Zealand. *Journal of Geological Society of Japan*, v. 113, p. xix-xx.
- [22] Urabe, A., Yasui, S., Inaba, M., **Kataoka, K.**, Takahama, N., and Mitsuda, S. (2006) Upper Pleistocene to Holocene stratigraphy in the Higashi-Niigata gas field, central Japan: The characteristics and sources of maker pumice beds. *Journal of the Japanese Association for Petroleum Technology*, v 71, p. 337-348.
- [23] **Kataoka, K.** (2005) Distal fluvio-lacustrine volcanoclastic resedimentation in response to an explosive silicic eruption: Pliocene Mushono tephra bed, central Japan. *Geological Society of America Bulletin*, v. 117, 3-17.
- [24] **Kataoka, K.** and Nakajo, T. (2004) Flow transformation and depositional organization of debris flow—hyperconcentrated flow—streamflow spectrum in volcanic fan-delta setting: the Pleistocene Lower and Middle Formations, Yachiho Group, central Japan. *Journal of Sedimentological Society of Japan*, n. 59, 17-26.
- [25] **Kataoka, K.** and Nakajo, T. (2002) Volcanoclastic resedimentation in distal fluvial basins induced by large-volume explosive volcanism: the Ebisutoge-Fukuda tephra, Plio-Pleistocene boundary, central Japan. *Sedimentology*, v. 49, 319-334.
- [26] Nagahashi, Y., **Kataoka, K.**, Yoshikawa, S, and, Sato, T. (2002) Correlation of the Km3 tephra from the Kitaura Formation with the Om-SK110 wide-spread tephra, Oga Peninsula, Akita prefecture, Japan. *Journal of Geological Society of Japan*, v. 108, 761-764.
- [27] **Kataoka, K.**, Nagahashi, Y. and Yoshikawa, S. (2001) An extremely large magnitude eruption close to the Plio-Pleistocene boundary: reconstruction of eruptive style and history of the Ebisutoge-Fukuda tephra, central Japan. *Journal of Volcanology and Geothermal Research*, v. 107, 47-69.
- [28] **Kataoka, K.** and Nakajo, T. (2000) Depositional processes of the debris-flow and hyperconcentrated flow deposits, the Ebisutoge-Fukuda tephra (Karegawa volcanic ash) in the Tokai Group, Plio-Pleistocene boundary, central Japan. *Journal of Geological Society of Japan*, v. 106, 897-900.
- [29] Satoguchi, Y., Watanabe, M., Nakajo, T. and **Kataoka, K.** (2000) Kd 38 volcanic ash bed intercalated in the lower part of the Kazusa Group in the Boso Peninsula, central Japan: Re-examination for the correlated volcanic ash bed. *Journal of Geological Society of Japan*, v. 106, 189-204.
- [30] **Kataoka, K.** and Yoshikawa, S. (1997) Fluvial terrace deposits along the Suzuka River, Mie Prefecture, central Japan: Chronology of terrace rarely intercalated with volcanic ash. *The Quaternary Research*, v. 36, 263-276.

Book Chapters

- [1] Nagahashi, Y., **Kataoka, K.S.**, and Nakazawa, N. (2016) Formation and geologic history of Lake Inawashiro-ko based on stratigraphy and sedimentary facies of the INW2012 core sediments. In: *Environmental Study in Urabandai-Inawashiro area*, p. 17-31.
- [2] **Kataoka, K.S.** and Miyabuchi, Y. (2011) Outflow event from the Aso caldera lake. 2011 PERC Planetary Geology Field Symposium Guidebook for fieldtrip, p. 37-40.
- [3] Oikawa, T., Ishizaki, Y. and **Kataoka, K.S.** (2010) Large-scale lahar and pyroclastic flow deposits of Yakedake Volcano Group, central Japan. *Journal of Geological Society of Japan*, v. 116, Supplement, p, 49-61