

**Name:** Tatsunori MATSUMOTO

**Title:** Emeritus Professor of Kanazawa University

**Birth date:** 1955/11/13

**Home Address:** 3-12-18 Kodatsuo, Kanazawa, Ishikawa, 920-0942 Japan

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### **Education and Degrees Held:**

1974 to 1978 Faculty of Engineering, Kanazawa University.  
1978 Awarded the degree of Bachelor of Engineering in Civil Engineering.  
1978 to 1979 Research student of Department of Civil Engineering, Kanazawa University.  
1979 to 1981 Master Course of Civil Engineering, Graduate School of Kanazawa University.  
1981 Awarded the degree of Master of Engineering in Civil Engineering.  
1989 Awarded the degree of Doctor of Engineering for a thesis entitled "Estimation of Dynamic and Static Bearing Capacity of Steel Pipe Piles" (in Japanese) from Kyoto University.

### **Career:**

1981 to 1991 Research Associate at the Department of Civil Engineering, Kanazawa University.  
1991 to 1998 Associate Professor at the Department of Civil Engineering, Kanazawa University.  
1994 Reserch Fellow of Department of Civil Engineering, Delft University of Technoloty, The Netherlands  
1999 to 2021 Professor at the Department of Civil Engineering, Kanazawa University.  
2021 Emeritus Professor of Kanazawa University

### **Research Interest:**

Pile dynamics, Pile load test method, Deformation analysis of pile foundation, Piled raft, Site investigation methods

### **Awards:**

Research Achievement Award, Japanese Geotechnical Society, 2020  
Best Paper Award, Third International Conference on Press-in Engineering, 2024  
Best Project Paper Award, Third International Conference on Press-in Engineering, 2024

**Publications:**

*The total number is more than 250.*

**Teaching experience:****Undergraduate teaching**

*Lecture courses given*

Soil mechanics I, Soil mechanics II, Ground and foundation engineering, Technical English, Civil engineering design, Computer programming

**Graduate teaching**

*Lecture courses given*

Ground and foundation mechanics, Practice of geotechnical and earthquake engineering

**Invited lecture/Short courses**

*Lecture courses given*

Keynote lecture in Conf. Deep Foundations and Ground Improvement Schemes, Bangkok, Thailand, 1994.  
Lectures in Seminar on Pile Testing and Performance, Johor Bahru, Malaysia Institute of Technology, 1997.  
Keynote lecture in Regional Conf. in Geotech. Eng., *GEOTROPIKA '97*, Johor Bahru, Malaysia, 1997.  
Keynote lectures in Pakistan National Conf. on Geotechnical Aspects in Site Selection, 1998.  
Keynote lecture in Deep Foundation Practice incorporating PILETALK '99, Singapore, 1999.  
Panelist and moderator in 6th Int. Conf. on the Application of Stress-Wave Theory to Piles, São Paulo, Brazil, 2000.  
Panelist in Int. Symp. on Frontiers in Offshore Geotech., Perth, Australia, 2005.  
Invited lectures in Workshop on piled and piled raft foundations, Griffith University, Australia, 2006.  
Lectures in SIIT of Thammasat University, Thailand (2003, 2005, 2006).  
Keynote lecture in the 8th Int. Conf. on the Application of Stress-Wave Theory to Piles, Lisbon, 2008.  
Invited lectures in Workshop on pile foundations, Griffith University, Australia, 2010.

**Research student supervision:****Research student supervised**

*Master* 45

*PhD* 8

**Overseas research student supervision**

*Master* 1

*PhD* 1

**External Activities:**

Invited Professor of L.N. Gumilyov Eurasian National University, Astana, Kazakhstan  
Referee of Doctor Degree of Asian Institute of Technology  
Member of International Society for Soil Mechanics and Geotechnical Engineering  
Member of Japanese Geotechnical Society  
Member of Japanese Civil Engineers  
Member of Architectural Institute of Japan

**Others:**

Chairman of the 10th Int. Conf. on Testing and Design Methods for Deep Foundations, Kanazawa 2012.

Chairman of the 2nd International Conference on Press-in Engineering, Tokyo, 10th Int. Conf. on Testing and Design Methods for Deep Foundations, Kanazawa

**Publications:**

**Journal papers**

- 1) Nishida, Y., Ohta, H., Matsumoto, T., Kurihara, K.: Bearing capacity due to plugged soil in open-ended pipe pile, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No. 364/III-4, pp.219-227, 1985.12 (in Japanese).
- 2) Nishida, Y., Sekiguchi, H., Matsumoto, T.: Stress Wave Monitoring for a Friction Pile During Driving : A New Analysis Procedure, Soils and Foundations, JSSMFE, Vol.26, No.4, 89-104, 1986.12
- 3) Matsumoto, T., Takei, M.: Effects of Soil Plug on Behaviour of Driven Pipe Piles, Soils and Foundations, JSSMFE, Vol.31, No.2, 14-34, 1991. 6
- 4) Matsumoto, T., Sekiguchi, H., Yoshida, H., Kita, K.: Significance of Two-Point Strain Measurements in SPT, Soil and Foundations, JSSMFE, Vol.32, No.2, 67-82, 1992.6
- 5) Matsumoto, T., Michi, Y., Hirano, T.: Field load tests of open-ended steel pipe piles driven in a diatomaceous mudstone, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No.511/III-30, 35-45, 1995.3 (in Japanese).
- 6) Matsumoto, T., Michi, Y., Hirano, T.: Performance of axially loaded steel pipe piles driven in soft rock, Jour. of Geotech. Eng., ASCE, Vol.121, No.4, 305-315, 1995.4
- 7) Matsumoto, T., Middendorp, P., Bermingham, P., Tsuzuki, M.: Rapid load test of a steel pipe pile driven in diatomaceous mudstone, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No.517/III-31, 13 - 24, 1995.6 (in Japanese).
- 8) Hayashi, T., Matsumoto, T., Yamada, K.: Statnamic load test on a long augered PHC pile constructed in gravel ground, Jour. of Architectural Institute of Japan, No.479号, pp.51-56, 1996.1 (in Japanese).
- 9) Kato, K., Kusakabe, O., Matsumoto, T.: Characteristics of rapid load tests observed in actual piles, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No.589/III-42, 155-166, 1998.3 (in Japanese).
- 10) Jardine, R.J., Chow, F.C., Matsumoto, T., Lehane, B.M.: A new design procedure for driven piles and application to two Japanese clays, Soil and Foundations, JGS, Vol.38, No.1, 207 - 219, 1998.3
- 11) Matsumoto, T., Hayashi, M., Michi, Y., Takesue, K., Futatsuka, Y.: Construction of driven steel pipe piles in a diatomaceous mudstone and prediction of load-settlement relations based on stress-wave theory, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No.610/III-45, 1 - 18, 1998.12 (in Japanese).
- 12) Kato, K., Horikoshi, K., Matsumoto, T., Kusakabe, O.: Interpretation methods of Statnamic pile load test results, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No.624/III-47, 267 - 282, 1999.6 (in Japanese).
- 13) Imada, K., Matsumoto, T., Nakata, Y.: Influence of soil resistance on results of integrity testing of model piles, Jour. of Geotechnical Engineering, Japan Society of Civil Engineers, No.652/III-51, 91-102, 2000.6 (in Japanese).
- 14) Imada, K., Matsumoto, T., Nakamura, S.: Estimation of pile head stiffness using analytical results of sonic integrity testing, Jour. of Japanese Geotechnical Society, Vo.41, No.2, 123 - 132, 2001.4 (in Japanese).
- 15) Wang, F.W., Katsuro, H., Matsumoto, T.: Applicability of Sarma method , M-P method and Janbu method in stability analysis of slopes, Journal of landslides, Vol.38, No.3, 101 - 107, 2001 (in Japanese).

- 16) Wang, F.W., Matsumoto, T., Maegawa, K.: Model of rapid landslide motion and distress area prediction, J. of Engineering Geology, Vol.10, 267 - 272, 2002.10
- 17) Matsumoto, T., Hashizume, Y., Fukumura, K., Pastsakorn, K., Horikoshi, K.: Preliminary study on behavior of model pile foundations in sand using shaking table, J. of Engineering Geology, Vol.10, 502 - 508, 2002.10
- 18) Pastsakorn, K., Matsumoto, T.: Recent development in simplified deformation analysis program PRAB for piled raft foundations, J. of Engineering Geology, Vol.10, 509 - 515, 2002.10
- 19) Kitiyodom, P., Matsumoto, T.: A simplified analysis method for piled raft and pile group foundations with batter piles, Int. Journal for Numer. and Anal. Methods in Geomech., Vol.26, 1349-1369, 2002.11
- 20) Kitiyodom, P., Matsumoto, T.: A simplified analysis method for piled raft foundations in non-homogeneous soils, Int. Journal for Numer. and Anal. Methods in Geomech., Vol.27, 85-109, 2003.2
- 21) Horikoshi, K., Matsumoto, T., Hashizume, Y., Watanabe, T., Fukuyama, H.: Performance of piled raft foundations subjected to static vertical loading and horizontal loading, Int. Journal of Physical Modelling in Geotechnics, Vol.3, No.2, pp.37-50, 2003.6
- 22) Horikoshi, K., Matsumoto, T., Hashizume, Y., Watanabe, T.: Performance of piled raft foundations subjected to dynamic loading, Int. Journal of Physical Modelling in Geotechnics, Vol.3, No.2, pp.51-62, 2003.6
- 23) Wang, F. W., Sassa, K., Matsumoto, T., Okuno, T.: Fludiation mechanism of landslide and prediction of movement area considering grain crushing, Jour. of Japan Landslide Society, Vol. 40, No. 5, pp.377-388, 2004.01 (in Japanese).
- 24) Okuno, T., Wang, F.W., Matsumoto, T.: Movement style and influential factors of giant Jinnosuke-dani Inadslide in Hakusan mountain, Jour. of Japan Landslide Society, Vol. 41, No. 11, pp.57-64, 2004 (in Japanese).
- 25) Kitiyodom, P., Matsumoto, T., Kanefusa, N.: Influence of reaction piles on the behaviour of test pile in static load testing, Canadian Geotechnical Jour., Vol.41, No.3, pp. 408-420, 2004.06
- 26) Matsumoto, T., Kitiyodom, P., Matsui, H., Katsuzaki, Y.: Monitoring of load distribution of the piles of a bridge during construction and public use, Soils & Foundations, Vol.44, No.4, pp. 109-118, 2004.08
- 27) Wang, F.W., Zhang, Y.M., Hou, Z.T., Matsumoto, T., Huang, B.L.: The July 14, 2003 Qianjiangping landslide, Three Gorges Reservior, China, Landslides, Vol.2, Vol.2, pp.157-162, 2004
- 28) Matsumoto, T., Fukumura, K., Kitiyodom, P., Oki, A., Horikoshi, K.: Experimental and analytical study on behaviour of model piled rafts in sand subjected to horizontal and moment loading, Int. Journal of Physical Modelling in Geotechnics, Vol. 4, No. 3, pp. 1-19, 2004.9
- 29) Matsumoto, T., Fukumura, K., Oki, A., Horikoshi, K.: Shaking table tests on model piled rafts in sand considering influence of superstructures, Int. Journal of Physical Modelling in Geotechnics, Vol. 4, No. 3, pp. 20-37, 2004.9
- 30) Tanaka, Y., Wang, F.W., Nakamura, K., Matsumoto, T., Characteristics and movement mechanism of a fludized landslide induced by long rain fall at Yamashina in Kanazawa, Jour. of Japan Landslide Society, 2005 (in Japanese).
- 31) Wang, F., Matsumoto, T., Tanaka, Y.: Two recent flowslides in Yamashina area, Kanazawa City, Japan, Landslide, Vol.2, pp. 229-234, 2005.06

- 32) Kitiyodom, P., Matsumoto, T., Kawaguchi, K.: A simplified analysis method for piled raft foundations subjected to ground movements induced by tunnelling, *Int. Journal for Numer. and Anal. Methods in Geomech.*, Vol.29, 1485-1507, 2005.12
- 33) Sonoda, R., Matsumoto, T., Kitiyodom, P.: Comparative analysis of pile foundations in an elastic ground subjected to sinusoidal input accelerations, *J. Struct. Constr. Eng., AIJ*, No. 615, pp. 127-135, 2007.5
- 34) Wang, F.W., Okuno, T., Matsumoto T.: Deformation characteristics and influential factors for the giant Jinnosuke-dani landslide in the Haku-san Mountain area, Japan. *Landslide J. of the International Consortium on Landslides*, Vol. 4, No. 1, pp.19-31, 2007
- 35) Tomisawa, K., Miura, S., Matsumoto, T., Kitiyodom, P., Kojima, E. and Kumagai, H.: Evaluation of subgrade reaction of steel-pipe piles using a dynamic horizontal loading test system, *Jour. of Applied Mechanics, JSCE*, Vol. 10, pp. 1055-1062, 2007.8
- 36) Sonoda, R., Matsumoto, T., Kitiyodom, P., Moritaka, H., Ono, T.: A case study of piled raft foundation using reverse construction method and its post-analysis, *Canadian Geotechnical Journal*, Vol.46, pp.142-159, 2009.02
- 37) Takada, T., Seki, H., Matsumoto, T., Fujii, M. Matsushita, K., Sato, T.: On evaluation methods for ground for residences by means of piezocone penetration test, *Japanese Geotechnical Journal, Japanese Geotechnical Society*, Vol. 4, No. 2, pp. 157-170, 2009.06.29 (in Japanese)
- 38) Matsumoto, T., Nemoto, H. Mikami, H., Yaegashi, K., Arai, T., Kitiyodom, P.: Load tests of piled raft models with different pile head connection conditions and their analyses, *Soils & Foundations*, Vol. 50, No.1, pp. 63-81, 2010.02.
- 39) Kojima, E., Kumagai, H., Tomisawa, K., Matsumoto, T. : Estimate of the static horizontal load versus horizontal displacement on steel pipe piles by dynamic horizontal load tests, *Japanese Geotechnical Journal*, Vol. 5, No. 4, pp.555-568, 2010 (in Japanese).
- 40) Takada, T., Seki. H., Matsumoto, T, Fujii, M., Okano T., Imai, K.: Confirmation tests of effects for soil improvements for residential ground, *Journal of Tech. Des., Architectural Institute of Japan*, No. 33, pp. 481 - 488, 2010.6 (in Japanese).
- 41) Kitiyodom, P., Matsumoto, T., Sonoda, R.: Approximate numerical analyses of a large piled raft foundation, *Soils and Foundations*, Vol. 51, No. 1, 2011.2.
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- 48) Unsever, Y.S., Matsumoto, T. Özkan, M.Y.: Numerical analyses of load tests on model foundations in dry sand, *Computers and Geotechnics*, Vol. 63, pp. 255–266, 2015.01.
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- 51) Vu Anh-Tuan, Matsumoto, T., Kobayashi, S., Shimono, S., Nguyen Tuong-Lai: Experimental study on pile foundation models having batter piles in dry sand and numerical validation, *Int. Journal of Physical Modelling in Geotechnics* (IF = 1.026), <http://dx.doi.org/10.1680/jphmg.16.00010>, Paper 1600010, 18 pages, 2016.
- 52) Anh-Tuan Vu, Tatsunori Matsumoto, Ryo Yoshitani, and Tuong-Lai Nguyen: Behaviours of pile group and piled raft foundation models having batter piles, *Journal of Earth Engineering*, accepted for publication, 14 pages, 2016.
- 53) Vu Anh-Tuan, Matsumoto, T.: A study on the interaction behaviour of pile foundations through model load tests, *The Transport Journal*, Special volume 57: Selected and reviewed paper from 2016 Int. Conf. on Sustainability in Civil Eng., Hanoi, Vietnam, pp.304-308, 2016.
- 54) Unsever, Y., Matsumoto, T., Esashi, K., Kobayashi, S.: Behaviour of model pile foundations under dynamic loads in saturated sand, *Bulletin of Earthquake Engineering*. Springer, Netherlands, DOI 10.1007/s10518-016-0029-y, , ISSN 1570-761X, (IF = 1.533), Vol. 15, pp 1355-1373, 2017.03.
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- 56) Tikanta, T., Matsumoto, T., Vu, A.T., Kobayashi, S., Shimono, S., Bamrungwong, C.: Fundamental experiments on a reinforcement method using sheet pile wall for bridge pile foundations subjected to pile embedment reduction and numerical validation, *Geotechnical Engineering Journal of the SEAGS & AGSSEA*, Special Issue of Research & Practice in Foundations & Deep Ground Improvement Techniques, Vol. 48, No. 4, pp.26-39, 2017.
- 57) Vu Anh-Tuan, Matsumoto T., Yoshitani R., Tuong-Lai Nguyen: Behaviours of Pile Group and Piled Raft Foundation Models Having Batter Piles    *Journal of Earth Engineering*, Vol. 2, No.1, pp.27-40, 2017.12
- 58) Vu Anh-Tuan, Matsumoto, T., Kobayashi, S., Nguyen Tuong-Lai: Model load tests on battered pile foundations and finite-element analysis, *Int. Journal of Physical Modelling in Geotechnics* (IF = 1.026), ISSN 1346-213X | E-ISSN 2042-6550, Vol. 18, Issue 1, pp. 33-54, 2018.01.

- 59) Moriyasu S., Kobayashi S., Matsumoto T.: Experimental study on friction fatigue of vibratory driven piles by in-situ model tests, *Soils and Foundations*, doi.org/10.1016/j.sandf.2018.03.010, 58(4), pp. 853-865, 2018.08
- 60) Moriyasu S., Kobayashi S., Matsumoto T.: Field load test on small pipe piles driven by vibratory hammer, 10th International Conference on Stress Wave Theory and Testing Methods for Deep Foundations, West Conshohocken, PA, ASTM International, doi.org/10.1520, pp.457-467, 2019.03
- 61) Hoang Thi Lua, Matsumoto, T.: Time-dependent behavior of piled raft foundations on saturated clay: Experimental investigations, *Int. Journal of GEOMATE*, ISSN: 2186-2982 (P), 2186-2990 (O), DOI: <https://doi.org/10.21660/2020.66.9150>, Vol. 18, Issue 66 (Online), pp. 1-8, 2020.02.
- 62) Hoang Thi Lua, Matsumoto T.: Long-term behavior of piled raft foundations models supported by jacked-in piles on saturated clay, <https://doi.org/10.1016/j.sandf.2020.02.005>, *Soils and Foundations*, <https://doi.org/10.1016/j.sandf.2020.02.005> Vol.60, No.1, pp.198-217, 2020.04.
- 63) Vu Anh-Tuan, Matsumoto T., Kenda, K.: Model vibration tests on piled raft and pile group foundations in dry sand, *Geotechnical Engineering Journal of the SEAGS & AGSSEA*, ISSN 0046-582, Vol. 51, No.2, pp. 95-102, 2020.06.
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- 65) Anh-Tuan Vu, Tatsunori Matsumoto, Xiong Xi & Duc-Phong Pham: Behaviours of batter-pile foundations subjected to combination of vertical load and cyclic horizontal loading, *International Journal of Geotechnical Engineering*, 14pp., 2021, ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/yjge20>
- 66) Xi Xiong, Tatsunori Matsumoto, Zhenming Shi, Feng Zhang: Flume tests and corresponding numerical simulation on hydraulic/mechanical behavior of Tangjiashan landslide dam subjected to seepage loading, *Soils and Foundations* 62, 21pp., 2022, <https://doi.org/10.1016/j.sandf.2022.10120>
- 67) Xi Xiong, Wentao Guo, Tatsunori Matsumoto, Yukihiro Ishihara: Vertical and horizontal bearing characteristics of model piled raft foundations supported by sheet piles, *International Journal of Physical Modelling in Geotechnics*, Volume 64, Issue 1, pp. 38-53, 2023.
- 68) Shota Yoshida, Xi Xiong, Tatsunori Matsumoto: Experimental and numerical study on reinforcement effect of plate anchors or flip anchors on model slopes, *Soils and Foundations*, Vol. 63, Issue 2, 2023, <https://doi.org/10.1016/j.sandf.2023.101285>
- 69) Lua Thi Hoang, Xi Xiong, Tatsunori Matsumoto: Effect of pile arrangement on long-term settlement and load distribution in piled raft foundation models supported by jacked-in piles in saturated clay, *Soils and Foundations* 64, Issue 2, 14pp., 2024, <https://doi.org/10.1016/j.sandf.2024.101426>.
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