

CURRICULUM VITAE (CV)

Takayoshi AOKI

Doctor of Engineering (The University of Tokyo)

Professor of Structural Engineering

Graduate School of Design and Architecture, Nagoya City University

Kitachikusa 2-1-10, Chikusa-ku, Nagoya 464-0083, JAPAN

Phone: +81-(0)52-721-1225 (Ext.3157)

Fax:+81-(0)52-721-3110

E-mail: aoki@sda.nagoya-cu.ac.jp

Home Page: <http://www.sda.nagoya-cu.ac.jp/aoki/>

Dr. Takayoshi Aoki is a professor of Graduate School of Design and Architecture at Nagoya City University. Before he joined Nagoya City University from 1997, he was a lecture at Miyagi National College of Technology from 1994, and assistant at Nagasaki University from 1988. He was also a visiting professor at University of Florence, Turin Polytechnic and University of Catania and a Visiting Scholar at University of Padua within the Erasmus-Mundus Project, financed by the EU (2008 and 2011). He was an overseas student of University of Florence, Italy in 1986-87. He earned his Dr. Eng. “Structural Characteristics and Construction Methods of the Dome of Santa Maria del Fiore” in 1991 from The University of Tokyo, M. Eng. in 1986 and B. Eng. in 1984 both from Toyohashi University of Technology.

He is currently leading the project “Development of Preservation/Renovation Techniques for Seismic Performance Improvement and Authenticity of Historical Buildings (FY2016-2020)” funded by the Japan Society for the Promotion of Science (JSPS) and “Project for Evaluation and Mitigation of Seismic Risk for Composite Masonry Buildings in Bhutan (FY2016-2021)” by the JST/JICA SATREPS (Science and Technology Research Partnership for Sustainable Development).

His research interests include site investigation, non-destructive testing method, diagnosis, repair and strengthening method, structural analysis and structural safety assessment of historical constructions, dynamic identification and structural health monitoring. He has been awarded several research projects granted by JSPS on Cultural Heritage as a Principal Investigator (Santuario di Vicoforte and L’Hangar per dirigibili di Augusta, Italy, 2002-03 (Kiban B) and 2006-08 (Kiban A); Sant’Agostino, San Silvestro and Torre Civica in L’Aquila, Italy; 2010-2014 (Kiban A), Santa Sofia in Costantinopoli, Turkey 1992-1997 (Kiban A, Young Scientists A) and by other foundations in Japan. The research projects involve wide variety of interests from different universities and institutes both within and outside Japan. He serves as a member of WG-17 (Historical Structures) of IASS (International Association for Shell and Spatial Structures), an expert member of International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage (ISCARSAH), International Council on Monuments and Sites (ICOMOS), and a member of the L’Aquila earthquake’s delegation from the Japanese Government.

RECENT RESEARCH ACTIVITIES I (Publications)

- [1] +*P. Wangmo, K.C. Shrestha, T. Aoki, Exploratory study of rammed earth walls under static element test, *Construction and Building Materials*, 266(A), 1-23, 2021.01
- [2] +*P. Wangmo, K.C. Shrestha, T. Aoki, M. Miyamoto, Pema, Strengthening strategies for existing rammed earth walls subjected to out-of-plane loading, *CivilEng*, 1(3), 229-242, 2020.10
- [3] +*P. Roberto, T. Aoki(4/5), Influence of traditional building practices in seismic vulnerability of Bhutanese vernacular rammed earth architecture, *International Journal of Architectural Heritage*, 1-20, 2020.7

- [4] +*T. Aoki(1/4), In-plane shear strength characteristics of masonry walls with varying mortar types and aspect ratios, 17th IB2MaC 2020, July 5-8, 2020, Kraków, Poland, 412-418, 2020.7
- [5] +*K.C. Shrestha, T. Aoki, M. Miyamoto, P. Wangmo, Pema, J.Y. Zhang, N. Takahashi, Strengthening of rammed earth structures with simple interventions, *Journal of Building Engineering*, 22, 1-10, 2020.5
- [6] +*N. Takahashi, Y. Katakai, T. Aoki, Optimal structural restoration of historic building in Japan considering life-cycle seismic loss analysis, *Japan Architectural Review*, 3(3), 284-297, 2020.7
- [7] +*T. Aoki(1/8), H. Aoki, J.Y. Zhang et al., Investigation on Kamotsuru sake brewing brick chimney for developing preservation policy, *Journal of Structural Engineering*, 66B, 61-66, 2020.3
- [8] +*J.Y. Zhang, T. Aoki, A frequency-domain non-iterative algorithm for structural parameter identification of shear buildings subjected to frequent earthquakes, *Computer-Aided Civil and Infrastructure Engineering*, 35, 615-627, 2020
- [9] +*T. Aoki(1/10), R. Lancellotta et al., 3D survey and dynamic monitoring of Torre degli Smeducci and old Cathedral Bell Tower at San Severino Marche, *A&RT*, 152(3), 91-101, 2019.12
- [10] +*D. Sabia, ..., T. Aoki(8/8), Architectural scale studies and monitoring of built heritage: 3D modelling for the seismic analysis of the basilica of San Nicola in Tolentino, *A&RT*, 152(3), 102-117, 2019.12
- [11] +* J.Y. Zhang, T. Aoki, Method of identifying layer stiffness of building and device therefor, Japanese Patent: 6746348; Chinese Patent: ZL 2016 8 0020111.6 (Patent)
- [12] +P. Wangmo, *K.C. Shrestha, M. Miyamoto, T. Aoki, Assessment of out-of-plane behavior of rammed earth walls by pull-down tests, *International Journal of Architectural Heritage*, 13(2), 273-287, 2019
- [13] +*K.C. Shrestha, T. Aoki, T. Konishi, M. Miyamoto, J.Y. Zhang, N. Takahashi, P. Wangmo, T. Aramaki, N. Yuasa, Full-scale pull-down tests on a two-storied rammed earth building with possible strengthening interventions, *Structural Analysis of Historical Constructions*, RILEM Book series 18, 1557-1565, 2019
- [14] +*T. Aoki, J.Y. Zhang, H. Aoki, N. Takahashi, Y. Nakano, H. Choi, Vibration characteristics of airship hangar in Augusta, Italy, *Proc. APCS2018*, Oct. 29-31, Penang, Malaysia, 195-205, 2018
- [15] +*F. Lorenzoni, T. Aoki(5/5), Post-earthquake controls and damage detection through structural health monitoring: applications in l'Aquila, *Journal of Civil Structural Health Monitoring*, 8(2), 217-236, 2018
- [16] +*J.Y. Zhang, T. Aoki, Damage detection of multi-story shear buildings due to earthquakes by model updating method, *Structural Control and Health Monitoring*, 24(4), e1895, 2017
- [17] +*T. Aoki, D. Sabia, Structural characterization of brick chimneys, in J.W. Bull (Editor), *Computer analysis and design of masonry structures*, Saxe-Coburg Publications, Stirlingshire, UK, 5, 127-155, 2017
- [18] +*S. Fujimori, T. Hasegawa, S. Hatanaka, T. Aoki(4/5), Study on improvement of small-diameter drilling tester and its application examination for concrete, *AIJ J. Technol. Des.*, 23(53), 25-30, 2017
- [19] +*N. Kubo, T. Aoki, S. Kamezaki, J. Okada, Deformation Prediction of Brick Masonry in Coke Oven, *ISIJ International*, The Iron and Steel Institute of Japan, 55(9), 1841-1848, 2015.09
- [20] +*K. Tago, T. Aoki, H. Azegami, Identification of building damage using vibrational eigenvalue and eigenmode pairs, *Japan Journal of Industrial and Applied Mathematics*, 32(2), 297-313, 2015.07
- [21] +*D. Sabia, T. Aoki, R. Cosentini, R. Lancellotta, Model updating to forecast the dynamic behavior of the Ghirlandina tower in Modena, Italy, *Earthquake Engineering*, 19(1), 1-24, 2015
- [22] +*M. Miyamoto, T. Aoki, Y. Tominaga, Pema, Pull-down test of the rammed earth walls at Paga Lhakhang in the Kingdom of Bhutan, *Int. J. of Sustainable Construction*, 2(1), 56-65, 2014.12
- [23] +*T. Aoki(1/10), N. Yuasa, H. Hamasaki, Y. Nakano, N. Takahashi et al., Safety Assessment of the Sanctuary of Vicoforte, Italy, *Journal of Materials and Structural Integrity*, 5(2/3), 215-240, 2011
- [24] +*T. Aoki, N. Mazzon, M. R. Valluzzi, F. Casarin, C. Modena, Dynamic Identification and Damage Detection of Multi-leaf Stone Masonry Building by Shaking Table Test, *Journal of Structural Engineering*, 56B, 99-105, 2010.3

- [25] +*T. Aoki, D. Sabia, D. Rivella, T. Komiyama, Structural Characterization of Rakanji Stone Arch Bridge by Experimental Tests and Numerical Model Updating, *International Journal of Architectural Heritage: Conservation, Analysis, and Restoration*, 1(3), 227-250, 2007.09

RECENT RESEARCH ACTIVITIES II (Invited Lectures and Talks, Prizes, etc.)

Lectures:

- [1] +Think about SDGs on Public Health and Bio-Diversity at Urban Environment in Asia, December 5-6, 2019, Nagoya City University, Japan “Development of Preservation/Renovation Techniques for Seismic Performance Improvement and Authenticity of Historical Buildings and Evaluation and Mitigation of Seismic Risk for Composite Masonry Buildings in Bhutan”
- [2] +Training Provided to Syrian Specialists in “Research Planning Methods to Restore Historical Cities and Buildings”, July 26, 2019, Tokyo National Research Institute for Cultural Properties, “First Aid and monitoring of historical masonry structures”
- [3] +Convegno internazionale di studi campanile di Giotto 2018, November 15-16, 2018, Florence, Italy, “Studies on dynamic identification of the Ghirlandina Tower in Modena”
- [4] +La protezione e il miglioramento sismico del patrimonio culturale, Festival della Scienza, Ministero degli Affari Esteri e della Cooperazione Internazionale e dell’Ambasciata del Giappone in Italia, October 27, 2017, Genova, Italy, “Japan and Italy: Development of preservation / renovation techniques for seismic performance improvement and authenticity of cultural heritage”
- [5] +The Sixth Symposium of the Society for Conservation of Cultural Heritage in East Asia, August 24-25, 2017, Shanghai, China, “Seismic Performance Evaluation and Reinforcement of Handa Akarenga Building, Handa, JAPAN”
- [6] +11th Japan-Italy Joint Committee on Cooperation in Science and Technology, October 19, 2011, Tokyo, Japan, 2011, “Characterization of Dynamic Behaviour of Historical Masonry Structures”
- [7] +Hans Caravanserais Symposium on Stone in Traditional & Modern Architecture, November 29-30, 2007, Antalya, Turkey, “Research on Masonry Structures”

Awards:

- [1] +2018 Award for International co-authored paper plus 1, Nagoya City University, Japan
F. Lorenzoni, M. Caldon, F. da Porto, C. Modena, T. Aoki, “Post-earthquake controls and damage detection through structural health monitoring: applications in l’Aquila”, *Journal of Civil Structural Health Monitoring*, Vol.8(2), pp.217-236, 2018.4
- [2] +Best Paper Award (International Conference on Preservation, Maintenance and Rehabilitation of Historical Buildings and Structures, March 2014 in Tomar, Portugal), March 2014, “Pull-down test of the rammed earth walls at Paga Lhakhang in the Kingdom of Bhutan” (with Prof. M. Miyamoto, Mr. Pema, Mr. Tominaga)
- [3] +First Honourable Mention H.W.H (Timber) West Best Paper Award (Eleventh Canadian Masonry Symposium), June 2009, “Shaking Table Tests on Two Multi-Leaf Stone Masonry Buildings” (with Dr. N. Mazzon, Prof. M.R. Valluzzi, Mr. E. Garbin, Mr. G. De Canio, Mr. N. Ranieri, Prof. C. Modena)
- [4] +Japan Concrete Institute Award (Encouragement), May 1998, “Study on mechanical characteristics of mortar in Hagia Sophia and some related historical structures”