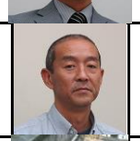
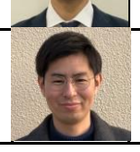
# Department of Civil and Environmental Engineering
# Faculty

| Position | Name | | E-mail | Research Subject |
|---|---|---|---|---|
| **Infrastructure Field** | | | | |
| Professor | Jun MURAKOSHI |  | murakos@tmu.ac.jp | Bridgel Engineering, Steel/Composite/Hybrid Structure, Fatigue, Buckling Stability, Long-Term Durability and Maintenance |
| Professor | Hiroyuki ONEYAMA |  | oneyama@tmu.ac.jp | Traffic Engineering, Transportation Planning, Transportation Environmental Analysis, Traffic Simulation, Transportation Network Analysis |
| Associate Professor | Tomoki ISHIKURA |  | iskr@tmu.ac.jp | Infrastructure Policy, National and Regional Planning, Macroeconomic Dynamics, Spatial Economics, Computable General Equilibrium Analysis |
| Associate Professor | Hitoshi NAKAMURA |  | hnaka@tmu.ac.jp | Structural Engineering, Bridge Engineering, Structural Characteristics of Cable-Supported Bridges, Application of Advanced Composite Materials for Infrastructures, Repair and Strengthening of Existing Structures |
| Assistant Professor | Yusuke KISHI |  | kishi@tmu.ac.jp | Structural Engineering, Seismic Engineering, Disaster Mitigation Engineering, Human Behavioural Science |
| Assistant Professor | Masami YANAGIHARA |  | yanagihara@tmu.ac.jp | Traffic Flow Analysis, Driving Behavior Modeling, Traffic Simulation, Traffic Psychology, Information Processing |
| **Environmental System Field** | | | | |
| Professor | Yoshiyuki IMAMURA |  | imamura@tmu.ac.jp | Water Policy, Hydrology, Disaster Risk Reduction, Flood Risk Management |
| Professor | Katsuhide YOKOYAMA |  | k-yoko@tmu.ac.jp | Environmental Hydraulics, Sediment Transport and Water Environment in a Reservoir, a River, and an Estuary |
| Associate Professor | Yasuhiro ARAI |  | y-arai@tmu.ac.jp | Water Supply Engineering, Environmental Engineering, Municipal Solid Waste Management Planning, Optimization Model |
| Associate Professor | Hiroshi SAKAI |  | h_sakai@tmu.ac.jp | Water and Wastewater Engineering, Water Environment Management, Water Quality Management |
| Associate Professor | Tetsuya SHINTANI |  | shintani@tmu.ac.jp | Coastal and Ocean Engineering, Stratified Flow, Computational Fluid Dynamics |
| Assistant Professor | Hideo AMAGUCHI |  | amaguchi@tmu.ac.jp | Hydrology, River Engineering |
| Assistant Professor | Gubash Azhikodan |  | gubash@tmu.ac.jp | Hydraulic Engineering, Estuarine hydro- and morphodynamics, Cohesive sediment transport,<br>Phytoplankton dynamics |
| **Safety and Disaster Prevention Field** | | | | |
| Professor | Nobuharu ISAGO |  | nisago@tmu.ac.jp | Tunnel Engineering, Underground Space Engineering, Design and Maintenance Methodology of Tunnel Structure and Facilities, Stability of Ground in Tunneling, Load-bearing Capacity Evaluation of Support Members |
| Professor | Yoshiya ODA |  | oda@tmu.ac.jp | Exploration Geophysics, Engineering Seismology, Earthquake and Volcano Disaster Prevention |
| Associate Professor | Kentaro OHNO |  | ohno@tmu.ac.jp | Concrete Engineering, Nondestructive Evaluation for Concrete Structures, Elastic wave techniques for Concrete |
| Associate Professor | Atsushi UENO |  | eagle@tmu.ac.jp | Concrete Engineering and Material Science, Environmental Consideration of Concrete and Concrete Making Materials, Evaluation of Properites of Concrete Making Materials |
| Associate Professor | Mitsutoshi YOSHIMINE |  | yoshimine-mitsutoshi@tmu.ac.jp | Soil Mechanics, Laboratory and Field Tests of Geomaterials, Soil liquefaction, Stability of Slopes and Embankments, Soil Dynamics, Transportation and Sedimentation of Debris |
| Assistant Professor | Kosuke KAWATA |  | k_kawata@tmu.ac.jp | Evaluation of deformation performance and mechanical behavior of a tunnel during external force<br>Sophistication of tunnel design, construction and maintenance technology |
| Assistant Professor | Tomohisa KAMADA |  | tkamada@tmu.ac.jp | Concrete Engineering, Durability and Maintenance of RC Structures, Pore Structure and Mass Transfer in Hardened Cement |

(As of April 2022)

IMPORTANT LINKS :

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|---|---|
| The department of Civil and Environmental Engineering | http://www.ues.tmu.ac.jp/civil/english/index.html |
| Graduate School and Faculty of Urban Environmental Sciences | http://www.ues.tmu.ac.jp/en/index.html |
| Tokyo Metropolitan University | http://www.tmu.ac.jp/english/index.html |

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Nobuharu ISAGO
【Position】: Professor
【Research Topic】: Tunnel Engineering, Urban Space Engineering, Rock Mechanics
【Outline of research achievement】
The research and investigation regarding road tunnel were performed in the following theme:
1) Mechanical behavior of support structure of mountain tunnel
2) Auxiliary method of mountain tunnel
3) Characteristics of structure of shield tunnel
4) Countermeasure against earthquake of road tunnel
5) Deformation mechanism of tunnel
Various results regarding planning, design, construction and rehabilitation of tunnel were acquired.
【Presentations】
1) Consideration of ground behavior prediction by two-point method with Voigt model: M.Uda, T.Funahashi, Y.Uemura, Y.Nashimoto and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
2) Effect examination of shape of inverted arch structure through model test: S.Ohmori, A.Devini, N.Isago and S.Yumiba, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
3) Study on the applicability of center drift method under huge ground depth: A.Devini, S.Ohmori and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
4) Experimental study of large deformation of shield tunnel considering the characteristics of joints: K.Kurahashi, K.Kawata and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
5) Analytical study of stability of tunnel structure and effect of pilot tunnel under poor ground condition: K.Shinoda, N.Isago, S.Ohmori and K.Kawata, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
6) Research on mechanical characteristics of rockbolt on pull-out behavior: T.Matsumoto, K.Kawata, N.Isago, S.Morimoto, D.Awaji and T.Okabe, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
7) Analytical consideration of mechanical effect and applicability of vertical pre-reinforcement: T.Amemiya, K.Kawata, N.Isago, K.Nishimura and H.Shiroma, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9
8) Analytical method of influence of invert arch shape on actual tunnel structure: T.Natsume,

R.Nakazato, K.Kawata. N.Isago, T.Otsu, N.Mikami and S.Tanabe, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9

9) Experimental study of the influence of vibraion on the behavior of portal for mountain tunnel: M.Matsuoka, K.Kawata, N.Isago, K.Nishimura, H.Yagi, H.Kitamura and K.Nakajima, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9

10) Experimental study of the relation between the shape of inverted arch structure and the load-bearing capacity of tunnel: R.Nakazato, K.Kawata, N.Isago, T.Otsu, N.Mikami and S.Tanabe, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9

11) Consideration on mechanical behavior of tunnel considering the effect of construction joints: A.Fujii, K.Kawata and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9

12) Experimental study of stress estimation of tunnel permanent lining by ultrasonic wave velocity: T.Ishimura, A.Kusaka and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.79 Annual Meeting, 2022.9

【Publications】

1) Parametric Study of Portal Area Condition for Mountain Tunnel Damaged by Earthquake: Akira Matsuoka, Yuta Yamanishi, Nobuharu Isago, Kosuke Kawata, Hiroshi Yagi, Hajime Kitamura, Proceedings of North American Tunneling Conference, 2022.6

2) Performance of rock bolt with different material rock bolt with different material by on site and model experiment: N. Isago1, Y. Goto, T. Matsumoto, K. Kawata, S. Morimoto, D. Awaji and T. Okabe, ITA-AITES World Tunnel Congress, Proceedings of WTC2022 and 47th General Assembly, 2022.9

3) Large deformation mechanism of lining through actual data and model experiment; N. Isago, T. Morita, K. Kurahashi, A. Matsuoka and K. Nishimura, ITA-AITES World Tunnel Congress, Proceedings of WTC2022 and 47th General Assembly, 2022.9

4) Rational design concept for inverted arch structure for mountain tunnel: T Natsume, Y Ishii, R Nakazato, T Otsu, K Kawata and N Isago, IOP Conference Series: Earth and Environmental Science, Volume 1124, Rock and Fracture Mechanics in Rock Engineering and Mining, 2022.9 - Helsinki, Finland

5) Consideration of the mechanical behaviour and the influence on ground of vertical pre-reinforcement: T Amemiya, T Nagata, N Isago, K Kawata, H Shiroma and K Nishimura, IOP Conference Series: Earth and Environmental Science, Volume 1124, Rock and Fracture Mechanics in Rock Engineering and Mining, 2022.9 - Helsinki, Finland

6) Evaluation of displacement prediction method for mountain tunnels showing time-dependence characteristics: M Uda, Y Nashimoto and N Isago, IOP Conference Series: Earth and Environmental Science, Volume 1124, Rock and Fracture Mechanics in Rock Engineering and Mining 2022.9 – Helsinki, Finland

7) Improving road tunnel resilience, considering safety and availability, A PIARC Briefing Note, including a collection of case studies: PIARC Technical Committee 4.4 (shared writing), 2022R04EN, 2022

8) A study on the support effectiveness of road tunnels with large deformations controlled by early closure: K.Nakano, A.Morita, K.Nishimura, N.Isago, Tunnels and Underground, Vol.53 No.9, pp.69-78, 2022.9

9) The effect of the leading length and remaining extension of the center drift on the behavior of the main tunnel: S.Ohmori, S.Zhai, T.Okabe, A.Gomi, N.Isago, K.Shinoda, Proceedings of Tunnel Engineering, JSCE, CD-ROM, 2022.11

10) Study on the relationship between shape of inverted arch structure and tunnel structural strength: R.Nakazato, T.Natsume, K.Kawata, N.Isago, T.Ohtsu, N.Mikami, S.Tanabe, Proceedings of Tunnel Engineering, JSCE, CD-ROM, 2022.11

11) Reinforcement effect of steel material on invert by model experiment and numerical analysis: Y.Koizumi, A.Kusaka, N.Isago, T.Ohtsu, Proceedings of Tunnel Engineering, JSCE, CD-ROM, 2022.11

12) A study on examination of estimation tunnel lining stress due to acoustic velocity: T.Ishimura, A.Kusaka, N.Isago, Proceedings of Tunnel Engineering, JSCE, CD-ROM, 2022.11

13) Proposal of evaluation method for load-bearing capacity of permanent lining in mountain tunnels: K.Kikuchi, A.Kusaka, N.Isago, T.Sasaki, Y.Tatsumi, Journal of Japan Society of Civil Engineers, Ser. F1 (Tunnel Engineering), Vol.78 No.2, p. I_1-I_15, 2023.2

【External Funding Sources】

・Two collaborative research with 3 organization, Research Grant (Japan Tunneling Association), Specified Donation from 8 organizations

・Grant-in-Aid for Scientific Research (C) Evaluation of collapse risk for tunnel structure by simple estimation of stress occurrence situation (Principal Investigator, 2023-2025)

【Social Contributions (Excluding confidential activities)】

Member of Tunnel Engineering Committee, Japan Road Association
Member of Road Tunnel Design and Construction Subcommittee, Japan Road Association
Chairman of Road Tunnel Facilities Subcommittee, Japan Road Association
Chairman of Internal Board of TC 4.4 Road tunnel operation, Japan Road Association
Member of TC 4.4 Road tunnel operation, PIARC (World Road Association)
Member of Rock Mechanics Committee, Japan Society of Civil Engineers
Member of Tunnel Engineering Committee, Japan Society of Civil Engineers
Member of International Technical Committee, Japan Tunneling Association
Chairman of ITA Subcommittee, Japan Tunneling Association
Member of Working Group 21 Life cycle asset management, International Tunneling Association

【Awards】

None

【Other Activities】

1) International sate-of-the-art of road tunnel facilities - PIARC TC 4.4 'Tunnel' Mid-term report: N.Isago, Magazine Road, No.973, pp.56-57, Japan Road Association, 2022.4
2) Britannica International Yearbook, Civil engineering tunnel, 2022.5
3) Progress of mountain tunnel engineering: N.Isago, Civil engineering construction, 2022.10
4) The 48th ITA General Assembly and World Tunnel Congress (Copenhagen) Report, Tunnels and Underground (shared writing), Vol.54, No.2, pp.75-86, 2023.2

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences

【Name】: Yoshiyuki Imamura

【Position】: Professor

【Research Topic】: Flood risk management, River basin management, Disaster risk reducition

【Outline of research achievement】

1) Joint research with Tokyo Metropolitan Government and the Ministry of Land, Infrastructure, Transport and Tourism on flood risk management and river basin management.

2) Three research papers were accepted and presented by the International Conference on Flood Management 9.

3) Two research papers were accepted and presented by the 20th Asia Oceania Geoscience Society.

4) Conducted funded research on flood risk reduction using DX technology

【Presentations】

1) Kyoji Oshima, Hideo Amaguchi, Yoshiyuki Imamura, Tadakatsu Takasaki: A Study on Extracting Water Surface Shapes from River Monitoring Camera Images Using AI, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, Ⅱ-66, 2023.3.
2) Pavithra Dissanayaka, Yoshiyuki Imamura, Hideo Amaguchi: Impacts of Lowering Riverbed on Water Depth due to Sand Mining in the Kelani River; Review, New Perspective, and Modelling, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, Ⅱ-10, 2023.3
3) Kento Nakajima, Hideo Amaguchi, Yoshiyuki Imamura: A Study on Synthesizing Hydraulic Characteristic Data in River Monitoring Camera Images using VFX Technology, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-67, 2023.3
4) Shupei Mitsui, Yoshiyuki Imamura, Hideo Amaguchi: A Study on the Impact and Dissemination of Agricultural Mechanization in Cambodia, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-23, 2023.3
5) Tapei Sato, Yoshiyuki Imamura, Hideo Amaguchi: Assessment of Climate Change Impacts in Metro Manila Using a Flood Inundation Model, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-22, 2023.3
6) Syunta Onuki, Yoshiyuki Imamura, Hideo Amaguchi: A Study on Estimating Microplastic Quantities in Rivers Using Socioeconomic and Environmental Indicators, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-38, 2023.3
7) Konosuke Mizuno, Shigeyuki Ishihara, Yoshiyuki Imamura, Hideo Amaguchi: A Study on the Four-Party Joint Project in the Myoshoji River First Regulation Reservoir in the Kanda River System, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-2, 2023.3
8) Ryo Murakami, Hideo Amaguchi, Yoshiyuki Imamura: Construction of a River Cross-Section

Database Using LiDAR in the Zenpukuji River, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-64, 2023.3

9) Yuito Aoki, Hideo Amaguchi, Yoshiyuki Imamura: Construction of RRI Model Data in the Chikuma River Basin for the Purpose of Evaluating Paddy Field Dam Flood Control Function, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-1, 2023.3
10) Yuki Okuda, Yoshiyuki Imamura, Hideo Amaguchi, Shintaro Fujitsuka: A Study on Efficient Reservoir Gate Operation in a Urban Small River Using Deep Reinforcement Learning, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-65, 2023.3
11) Sora Hirabayashi, Hiroyuki Okui, Yoshiyuki Imamura, Hideo Amaguchi, Munenori Masuda: A Study for the Improvement of Portable Mini Disk Infiltrometer Test Method through Video Analysis, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-24, 2023.3
12) Shono Kato, Tadakatsu Takasaki, Yoshiyuki Imamura, Hideo Amaguchi: Construction of a Hydraulic Characteristics Database around Oashi Bridge (Arakawa River) Using Two-Dimensional Unsteady Flow Calculation, 50th Kanto Reginal Annual Meeting of Japan Society of Civil Engineering, II-68, 2023.3

【Publications】

1) Yoshiyuki Imamura, Hideo Amaguchi, Kazushi Matsuda, Assessing the impact of urbanization and climate change on the rainwater storage function in the Tsurumi River Basin, Japan, 9th International Conference on Flood Management, Tsukuba, 2023.2.
2) Hideo Amaguchi, Jonas Olsson, Akira Kawamura, Yoshiyuki Imamura, Evaluation of climate change impacts on an urban river flow by the high resolution rainfall data, 9th International Conference on Flood Management, Tsukuba, 2023.2.
3) Ravindra V. Kale, Toshio Koike, Katsunori Tamakawa, Manmohan K. Goel, Yoshihiro Shibuo, Yoshiyuki Imamura, Integrated WEB-DHM and RRI based modeling framework to assess the role of dam operation on flood disaster risk reduction in Brahmani-Baitarani delt, 9th International Conference on Flood Management, Tsukuba, 2023.2.

【External Funding Sources】

- Representative, Research and development on AR (Augmented Reality) technology using river monitoring cameras, Research representative, Kanto Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism, FY2021-2023
- Research member, Research on Environmental Pollution Prevention Measures for Floating Debris and Related Issues in Metropolitan River Basins - Prevention and Conservation Considering Extreme Weather and Urban Lockdowns, Tokyo Metropolitan Government, FY2022-2024.

【Social Contributions (Excluding confidential activities)】

- Specialist member of Infrastructure Resilience WG in ISO/TC 292/WG 5: Community resilience
- Lecture at Civil Engineering Technical Seminar for the Fiscal Year 2022 (Bureau of Construction, Tokyo Metropolitan Government) - Topic: Evolution of Flood Management Policies and Future Directions for "River Basin Disaster Resilience and Sustainability by All."
- Collaborating with the Tokyo Metropolitan Government, organizing events such as the Megalopolis Seminar and coordination meetings.
- Participating in the 4th Asia-Pacific Water Summit, G20 Water and Disaster Special Meeting, and United Nations Water Conference.
- Committee Member of the International Committee of the Japan Society of Natural Disaster Science.
- Council Member of Japan Society of Photogrammetry and Remote Sensing.

【Awards】

Shono Kato, Tadakatsu Takasaki, Yoshiyuki Imamura, Hideo Amaguchi: Construction of a Hydraulic Characteristics Database around Oashi Bridge (Arakawa River) for Real-Time River Information Provision, President's Award, Alumni Association of the Civil and Environmental Department of Tokyo Metropolitan University.

【Other Activities】

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Yoshiya ODA
【Position】: Professor
【Research Topic】: Exploration Geophysics
【Outline of research achievement】
We, Exploration Geophysics Laboratory, focus on development of new analysis methods for exploration geophysics and its applications to civil engineering, earthquake engineering and volcanic engineering fields. The main research topics of this year are as follows: 1) Crustal structure (velocity/attenuation) and surface displacement using InSAR analysis of Hachijojima and Kozushima Island, Tokyo. 2) Seismic phase detection and PGV estimation using deep learning technology. 3) Estimation of crack depth using surface wave for concrete structures. 4) Seismic Observation in Zushi City.
【Presentations】
1) Hiroyuki Azuma, Hikaru Kunimasa, Ryohei Tottori, Yoshiya Oda, Toshiki Watanabe, Toshifumi Matsuoka, Automatic first arrival picking of P and S-wave using machine learning from temporary observation records on a volcanic island, Hachijojima, AGU fall meeting 2022, V52F-0044, Dec. 2022.
2) Hikaru Kunimasa, Hiroyuki Azuma, Yoshiya Oda, Toshiki Watanabe, Toshifumi Matsuoka, Automatic Seismic Wave Detection by Deep Learning Using EQ transformer: Study of Application to Observed Data for 7 Months in Hachijojima Island, Proceedings of the 147th SEGJ Conference 28-31, Nov. 2022.
3) Utako Watanabe, Hiroyuki Azuma, Yoshiya Oda, Toshiki Watanabe, Attenuation characteristics of Hachijojima Island from twofold spectral ratio method using dense seismic observation (Part.2), Proceedings of the 147th SEGJ Conference 24-27, Nov. 2022.
4) Yoshiki Minami, Hiroyuki Azuma, Yoshiya Oda, Toru Takahashi, Kyosuke Onishi, Shinichiro Iso, Estimation of crack depth in concrete using attenuation effect of surface wave: Extending the estimation range using obliquely incident surface wave, Proceedings of the SEGJ Conference 146 31-34, June. 2022.
5) Utako Watanabe, Yoshiya Oda, Keitaro Fukushima, Kohki Nagasawa, Hikaru Ota, Evaluation of the watershed boundary of forests on the Konsen Plateau, Eastern Hokkaido, using microtremor array survey, Proceedings of the SEGJ Conference 146, 58-60, June 2022.
6) Hikaru Ota, Yoshiya Oda, Tsutomu Ochiai, Takahisa Enomoto, Hiroyuki Azuma, Kazuya Mitsuji, Shigeki Senna, Estimation of the Engineering Bedrock Shape in the Shonai Plain Using Microtremor Array Survey, Proceedings of the SEGJ Conference 146 69-72, June 2022.
7) Hiroyuki Azuma, Hikaru Kunimasa, Ryohei Tottori, Yoshiya Oda, Seismic wave detection method

by deep learning applied to temporary seismic observation data at Hachijojima Island, Proceedings of the SEGJ Conference 146 83-86, June 2022.

8) Tsutomu Ochiai, Takahisa Enomoto, Michio Miyano Eisuke Ikuta Yoshiya Oda, Comparison between house damage investigation in Mashiki Town after 2016 Kumamoto Earthquake and microtremor measurements, Proceedings of the 77th JSCE Annual Meeting, [CS10-15], Sep. 2022.

【Publications】

1) Nature and disaster of Izu Islands, Section 5 Subsurface structure of Hachijojima Volcano – Analysis using temporary seismic observation data, Kokon shoin, Mar. 2023.

【External Funding Sources】

1) Grant-in-Aid for Scientific Research(C): Co-Investigator, 2020-2022
2) Grant-in-Aid for Scientific Research(C): Co-Investigator, 2022-2024
3) Grant-in-Aid for Scientific Research(C): Co-Investigator, 2022-2024
4) Specified Donations

【Social Contributions (Excluding confidential activities)】

1) Board member of the society of exploration geophysicist of Japan
2) Committee member of JSPS
3) Committee member of Tokyo metropolitan small and medium enterprise support center
4) Committee member of water works bureau of City of Kawasaki

【Awards】

The 145th SEGJ Conference Outstanding Presentation Award (Oral) (MS student)

【Other Activities】

2022 Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Environmental Engineering
【Name】: Jun MURAKOSHI
【Position】: Professor
【Research Topic】: Bridge Engineering, Steel Bridge Design, Remaining Load-carrying Capacity Evaluation and Fatigue Evaluation of Steel Highway Bridge, Repair and Strengthening

【Outline of research achievement】

Experimental and analytical studies were conducted on evaluation methods for load carrying capacity of steel highway bridges subjected to seismic lateral load, clarification of fatigue behavior of orthotropic steel decks and durability evaluation of SFRC overlays, and a practical fatigue durability evaluation method for steel bridges. As results, the behavior of girder ends subjected to seismic load and the fatigue strength of adhesively bonded joints in SFRC overlays were clarified. In addition, significant findings were obtained regarding the relationship between local stresses at main girder-cross beam connections and the deformation behavior of the main girders and RC decks, which are the dominant factors for the displacement-induced fatigue in steel I-girder bridges.

【Presentations】

1) Huang, Z., Murakoshi, J., Nogami, K. and Kishi, Y.: Simple calculation method of remaining capacity for compressive members with uniform section loss in steel truss bridge, Structural Engineering Symposium, JSCE, 2022.4. (in Japanese)
2) Kurabayashi, T., Murakoshi, J., Kinomoto, T., Sawada, M. and Ohnishi, T. : Study on application of fatigue crack propagation analysis for actual size out-of-plane gusset joints, Symposium on Constructional Steel, JSSC, 2022.11. (in Japanese)
3) Uaje, M.J.B. and Murakoshi, J.: Numerical study on stress reduction effect of steel fiber reinforced concrete (SFRC) overlay in orthotropic steel deck (OSD), Symposium on Constructional Steel, JSSC, 2022.11.
4) Shirakawa, T., Murakoshi, J. and Ono, S. : Shear fatigue behavior on adhesively bonded joint of SFRC overlay on orthotropic steel deck with different concretes and adhesives, 12$^{th}$ Symposium on Decks of Highway Bridges, JSCE, 2022.10. (in Japanese)

【Publications】

1) Katayama, T., Murakoshi, J., Nogami K., and Kishi Y. : Damage mechanism and load-carrying capacity at girder end of existing steel girder bridge under seismic lateral force, International Journal of Steel Structures, pp. 1864-1875, 2022.11.
2) Kurabayashi, T., Murakoshi, J., Kinomoto, T., Sawada, M. and Ohnishi, T. : Study on application of fatigue crack propagation analysis for actual size out-of-plane gusset joints, Proceedings of Constructional Steel, JSSC, Vol.30, pp.324-333, 2022.11. (in Japanese)
3) Uaje, M.J.B.and Murakoshi, J. : Numerical study on stress reduction effect of steel fiber reinforced concrete

(SFRC) overlay in orthotropic steel deck (OSD), Proceedings of Constructional Steel , Vol.30, pp.314-223, 2022.11.

4) Shirakawa, T., Murakoshi, J. and Ono, S. : Shear fatigue behavior on adhesively bonded joint of SFRC overlay on orthotropic steel deck with different concretes and adhesives, Proceedings of 12th Symposium on Decks of Highway Bridges, JSCE, 2022.10. (in Japanese)

5) Kurabayashi, T., Murakoshi, J., Kinomoto, T., Sawada, M. and Ohnishi, T. : Considerations on applicability of fatigue crack propagation analysis method for fatigue crack of out-of-plane gusset joints, Journal of Structural Engineering, JSCE, Vol.69A, pp.547-557, 2023.3. (in Japanese)

【External Funding Sources】

・Practical diagnostic method for fatigue damages at main girder-cross beam connection in steel highway bridge, Principal Investigator, JSPS KAKENHI Grant No.21K04237, FY2021-FY2023

・Study on evaluation of remaining load carrying capacity of steel girder ends IV, Principal Investigator, Research funds of JISF, FY2022

・Study on effective countermeasures for fatigue cracks at main girder-cross member connection in steel girder bridges, Principal Investigator, Specific Research Donations of Highway Technology Research Center, FY2021-FY2022

・Study on practical method for fatigue durability evaluation of existing steel highway bridges using FEM data, Principal Investigator, Subsidies for Research and Education on Steel Structure, JISF, FY2022-FY2023

【Social Contributions (Excluding confidential activities)】

・Japan Road Association, Member of Committee on Bridges

・JSCE, Member of Committee on Steel Structure, Chairman of Sub-committee for Standard Specifications for Steel and Composite Structures

・College of Land, Infrastructure, Transport and Tourism, MLIT, Lecturer of Training Course on Design and Maintenance of Highway Structures

・Ehime University, Lecturer of Maintenance Experts Training Course

・Tokyo Metropolitan Public Corporation by Road Improvement and Management, Lecturer of Bridge Maintenance Professional Engineering Training Course, etc.

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Dr. Katsuhide YOKOYAMA
【Position】: Professor
【Research Topic】: Environmental Hydraulics
【Outline of research achievement】
With the goals of elucidating the mechanisms of water, sediment, and nutrient transport in the watershed and developing management techniques for the river environment, the following were conducted.
(1) Forestry surveys were conducted in six watersheds upstream of the Ogawachi Dam, and a distributed sediment yield model was completed and a sediment yield map was presented.
(2) Joint research on saltwater movement and fish habitat was initiated in the Shimoyama River in Kanagawa Prefecture, the Okibata River in Fukuoka Prefecture, and the Kollam River in India.
(3) The consumption rate of dissolved oxygen was studied in a salt marsh in the Moune area of Kesennuma.

【Presentations】
1) Gunay, Iwama, Yokoyama, Sakai, Koizumi, Sakai, Takahashi (2022) Quantifying the differences in erodibility between poorly- and effectively-managed forests in the Ogouchi Dam watershed. Proc. Japan Water Works Association Research Conference, 2022: 788–789.
2) Phyu, P., Yokoyama, Azhikodan (2022) Long-term (1953-2020) Morphological Changes of Chikugo River, Japan. Proc. 19th Annual Meeting, Asia Oceania Geosciences Society, AOGS 2022 VIRTUAL, Singapore
3) Inoue, Yokoyama, Azhikodan (2022) Numerical Modelling of Saltwater and Freshwater Flow Dynamics at the Confluence of Tidal Rivers, Proc. 19th Annual Meeting, Asia Oceania Geosciences Society, AOGS 2022 VIRTUAL, Singapore
4) Galang, Gunay, Sakai, Yokoyama (2023) Development of a water quality model to evaluate the impacts of various watershed management and forest conservation practices on the quality of water in a reservoir using SWAT, Proc. 57th Annual Conf., JSCE on Water Management, 2023.

【Publications】
1) Lett Wai Nwe, Yokoyama, K., Azhikodan, G. (2022) Phytoplankton habitats and size distribution during a neap-spring transition in the highly turbid macrotidal Chikugo River estuary, Science of The Total Environment, 850, https://doi.org/10.1016/j.scitotenv.2022.157810
2) Lett Wai Nwe, Azhikodan, G., Yokoyama, K. (2022) Changes in size distribution of phytoplankton in response to tidal variability in the Chikugo River estuary, Journal of JSCE, Ser. B1 (Hydraulic.

Engineering), 78(2)
3) Gunay, C.J.C., Yokoyama, K., Sakai, H., Koizumi, A., and Sakai, K. (2023). Decadal changes in soil water storage characteristics linked to forest management in a steep watershed. Water, 15(1): 54. https://doi.org/10.3390/w15010054
4) Hlaing, N.O., Azhikodan, G., Yokoyama, K. (2022). Seasonal and tidal variations of Estuarine Turbidity Maximum (ETM) at Tanintharyi River estuary. Journal of Japan Society of Civil Engineers, Ser. B1 (Hydraulic Engineering), 78 (2), I_1123-I_1128. https://doi.org/10.2208/jscejhe.78.2_I_1123
5) Mallare, Reden A., Shintani, T., Yokoyama, K. (2022) Estimation of Non-Uniform Wind Field Over a Meandering Reservoir, Journal of Japan Society of Civil Engineers, Ser. B1 (Hydraulic Engineering), 78 (2), p. I_1039-I_1044, https://doi.org/10.2208/jscejhe.78.2_I_1039

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Yasuhiro Arai
【Position】: Associate Professor
【Research Topic】: Water Supply Engineering, Environmental Systems
【Outline of research achievement】
1) Regarding water supply engineering, research on updating and maintenance of water pipe networks and research on water leakage detection using IoT and AI were carried out.
2) Regarding waste treatment, research was conducted on the stable operation of incineration facilities and the effective use of incineration residues in response to changes in waste composition.

【Presentations】
1) Yasuhiro ARAI, Hiroshi SAKAI, Takaharu KUNIZANE, Akira KOIZUMI , Kazuhisa FUJIKAWA, Souichiro SAKAI and Keita SASAKI (2022) Logistic regression analysis focusing on changes in unit water consumption for singles due to COVID-19, Reiwa 4rd Annual Meeting of the Japan Society of Civil Engineers, Ⅶ-57. (in Japanese)
2) Muh. Anshari Caronge, Kaito Ito, Yasuhiro ARAI, Takaharu KUNIZANE and Akira KOIZUMI(2022) EVALUATION OF WATER LEAKAGE MODELUSING ACTUAL LEAKAGE SOUND, Proceedings of Reiwa 4rd JWWA Annual Conference and Symposium, pp. 792-793 . (in Japanese)
3) Brazil Ginalyn Robel Marzan, Takuma Iwamoto, Yasuhiro ARAI, Takaharu KUNIZANE and Akira KOIZUMI(2022) Use of Long Term Training Data in Time Series Forecasting of Chlorine Residual in Water Supply and Distribution System using Long Short -Term Memory Network, Proceedings of Reiwa 4rd JWWA Annual Conference and Symposium, pp. 790-791. (in Japanese)

【Publications】
1) Yasuhiro ARAI, Reon INOUE, Hirosi SAKAI, Takaharu KUNIZANE, Akira KOIZUMI, Kazuhisa FUJIKAWA, Souichiro SAKAI and Keita SASAKI (2002)CHANGES IN THE BASIC UNIT WATER VOLUME OF HOUSEHOLD WATER DUE TO COVID-19:ANALYSIS OF THE RELEVANT FACTORS BASED ON QUESTIONNAIRE SURVEY DATA.Journal of JSCE, Ser.G, Vol.78, No.6 (Environmental Systems Research Vol.50), pp.Ⅱ-129-Ⅱ-140 .[in Japanese]
2) Motochika SHIMADA, Yasuhiro ARAI, Takaharu KUNIZANE and Akira KOIZUMI (2022) EVALUATION OF THE WATER LEAKAGE DETECTION MODEL BY TRAINING MULTIPLE WATER LEAKAGE SOUND.Journal of JSCE, Ser.G, Vol.78, No.6 (Environmental Systems Research Vol.50), pp.Ⅱ-141-Ⅱ-152 .[in Japanese]
3) B.Bakri, S.Pallu, N.A.Mangarenji, M.Ihsan, Y.Arai(2022) The effectiveness of local sands of

Indonesian South Sulawesi as filtration material in water treatment plant, Sustainable Water Resources Management 2023

【External Funding Sources】

1) Grant-in-Aid for Scientific Research [KAKENHI] (C), 20K12277, Co-Investigator, 2020-2022.

2) Grant-in-Aid for Scientific Research [KAKENHI] (C), 22K04271, 2022-2024..

2) Japan Water Research Center, NewPipes Project (2020-2022).

【Social Contributions (Excluding confidential activities)】

1) Tokyo Metropolitan Government / Council for Environmental Impact Assessment

2) Sagamihara City / Council for Small Water Supply System

3) Akishima City / Committee for Public Facilities Comprehensive Management Plan Promotion

【Awards】

None

【Other Activities】

Collaborative research with Bureau of Waterworks Tokyo Metropolitan Government (TMWB)

1) Study on the actual usage of domestic water focusing on changes in population structure and lifestyle.　(2020-2023)

2) Joint research on water distribution network pipeline renewal plan based on service life. (2020-2022)

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Tomoki Ishikura
【Position】: Associate Professor
【Research Topic】: Infrastructure Planning and Management
【Outline of research achievement】
1) The new high speed rail Chuo Shinkansen using SuperConducting MAGnetic LEVitation, SCMAGLEV, railway system will drastically change the intercity mobility. The revolution of the mobility can influence to economic and geographic status of Japan. This paper develops a spatial economic model based on quantitative spatial economics (QSE) framework and estimates the impacts caused by Chuo Shinkansen by using the model. According to the short run analysis results, the almost all regions gain the welfare improvement. However, our estimation implies the demographic agglomeration into a small number of regions will arise in long run.

2) We introduce `interregional commodity flow model (ICFM)' developed by Kim, Ham and Boyce (PiRS2002). ICFM is an integrated system of transport network and input-output modeling, which describes the interaction of transport network flows and commodity trade demand and estimates regional and inter-regional commodity flows and transport network flows simultaneously. The model furthermore estimates the changes in shortest path and minimum generalized cost of each region-pair. We apply the model to Japanese inter-prefecture transport network for the estimation of impacts by volcanic ash fall. The application study estimates the impacts of two eruption scenarios, Mt.Fuji and Mt.Asama. Assuming that capacity of transport link including the road sections where the volcanic ash falls decreases, we estimate the influences on transport network flows and commodity flows. The results show remarkable changes in shortest route of specific O-D pairs and generation of new bottlenecks caused by traffic concentration. Thus, the study can contribute to the discussion of vulnerable network and regions when volcanic eruption takes place.

【Presentations】
1) Ishikura, Tomoki. and Iso, Shogo.: Estimation of impacts of volcanic ash fall from Mt.Fuji eruption on freight transport and effects of partial restoration of highways, 17th meeting of Disaster prevention planning research, Kyoto, September 2022.
2) Komatsu, Kanata., Ishikura, Tomoki. and Yokoyama, Fuga.: An analysis on the characteristics of the estimates of benchmark final demand data for multiregional economic models, Proceedings of Infrastructure Planning 66, CD-ROM, November 2022, Okinawa.
3) Ishikura, Tomoki.: A spatial economic perspective of new high speed rail impact in Japan, Paper

presented at 61th Congress of the European Regional Science, Pecs, Hungary, August 2022.

【Publications】

1) Ishikura, Tomoki. and Yamamoto, Kazuki., An application of a trade barrier estimation method based on the theoretical foundation of multi-regional trade model for Japanese inter-regional trade, Journal of Japan Society of Civil Engineers, Ser. D3 (Infrastructure Planning and Management), 77 (5), I_21-I_28 (2022).
2) Ishikura, Tomoki: Economic and geographical impact assessment of intercity transport investment project based on spatial economics -an application to "Chuo-Shinkansen SCMAGLEV", Journal of Japan Society of Civil Engineers, Ser. D3 (Infrastructure Planning and Management), 78 (3) 122-136 (2022).
3) Ishikura, T. and Yokoyama, F. Regional economic effects of the Ring Road project in the Greater Tokyo Area: A spatial CGE approach. Papers in Regional Science, 101(4), 811– 837 (2022).

【External Funding Sources】

JSPS　KAKENHI, Grant-in-Aid for Scientific Research (B), 22H01617, Principal Investigator, 2022-2024.

【Social Contributions (Excluding confidential activities)】

NA

【Awards】

NA

【Other Activities】

NA

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences

【Name】: Atsushi Ueno

【Position】: Associate Professor

【Research Topic】: Materials for Civil engineering, Concrete engineering

【Outline of research achievement】

1) A study on durability and skid resistance of concrete pavement, detail investigation of surface texture factors of concrete pavement to maintain high skid resistance were conducted from the stand point of a traffic safety. Influence of steam curing condition on properties of hardened concrete for durable pre-cast concrete products, evaluation of properties of volcanic materials as concrete making materials, were examined as the basic properties for various types of concrete.

【Presentations】

1) A Study on the Effect of Unit Content and Particle Size Distribution of Fine Aggregate on Skid Resistance of Concrete Pavement, 2nd International conference on Engineering and Agro-Industrial Technology, 2023.2

2) Evaluation of microstructure in mortar during temperature history curing by ultrasonic and AE methods, 2nd International conference on Engineering and Agro-Industrial Technology, 2023.2

3) Other 9 presentations on concrete engineering.

【Publications】

1) Current State of Knowledge on Bare High-Nickel Type Weathering Steel Towards the Application as Concrete Reinforcement, Emel Ken D. Benito1 (UPLB), Atsushi Ueno and Tomoko Fukuyama (Ritsumeikan Univ.), Journal of Advanced Concrete Technology Vol. 20, 2022.4

2) Process monitoring of mortar during temperature history curing by ultrasonic and AE methods, Hiroto Nagashima, Kentaro Ohno, Atsushi Ueno and Tomohisa Kamada, Progress in Acoustic Emission XX, 2022.11

3) Other 6 technical papers or books.

【External Funding Sources】

1) NEDO Green innovation funds.

2) Grants-in-Aid for Scientific Research (C)

3) Two funding support for basic study on acceleration curing of precast concrete.

【Social Contributions (Excluding confidential activities)】

1) 6 technical committees on JSCE

2) 4 technical committees on JCI (Japan Concrete Institute)

3) 1 technical committee on JCA (Japan Cement Association)

4) 1 technical committee on JSPS (Japan Society for the Promotion of Science)

【Awards】

None

【Other Activities】

1) Co-operation with Tokyo Metropolitan Gov.

2) Research work in Research center for volcanic hazards and their mitigation of TMU.

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences

【Name】: Kentaro OHNO

【Position】: Associate Professor

【Research Topic】: Concrete Structure, Maintenance and Non-destructive Testing for Existing Concrete Structures

【Outline of research achievement】

1) Estimation of concrete stress in prestressed concrete by using ultrasonic
2) Estimation of strength in early age concrete for lining concrete by impact elastic wave method
3) Effect of both crack width and leakage of concrete on ultrasonic propagation characteristics
4) Investigation of AE source location method with P-wave velocity change
5) Process monitoring of steam-cured concrete by ultrasonic and AE methods

【Presentations】

1) Sochi SAKAI, Atsushi UENO, Kimitaka UJI and Kentaro OHNO : Effect of entrained air on mortar after steam curing, Proceedings of the 76th Annual Conference of the Japan Society of Civil Engineers, V-216, 2021. Sep.[in Japanese]
2) Ryutaro KASASHIMA, Kentaro OHNO, Kimitaka UJI and Atsushi UENO : Detection of horizontal cracks in RC slabs with asphalt pavement by using deflection resonance due to steel ball impact, Proceedings of the 76th Annual Conference of the Japan Society of Civil Engineers, V-318, 2021. Sep.[in Japanese]
3) Satoshi IWANO, Shinya UCHIDA, Masakazu HARUHATA, Kentaro OHNO and Shigeto KATAOKA : Comparison of elastic waves propagating in embedded steel under different adhesion conditions with concrete, Proceedings of the 76th Annual Conference of the Japan Society of Civil Engineers, V-319, 2021. Sep.[in Japanese]
4) Emi OSANO, Kentaro OHNO, Kimitaka UJI and Atsushi UENO : Estimation crack depth in concrete by impact elastic wave method, Proceedings of the 76th Annual Conference of the Japan Society of Civil Engineers, V-320, 2021. Sep.[in Japanese]
5) Ko HIWATASHI, Kentaro OHNO, Atsushi UENO, Kimitaka UJI, Noriyuki UTAGAWA, Shinya KITAGAWA and Junichi HAYAKAWA : Relation between compressive strength of early age concrete and elastic wave propagation characteristics in steel-concrete bonding, Proceedings of the 76th Annual Conference of the Japan Society of Civil Engineers, V-332, 2021. Sep.[in Japanese]
6) Shunsuke IZUMI, Atsushi UENO, Kentaro OHNO and Kimitaka UJI : Applicability of water absorption measuring by electronic resistance method for fine aggregate from volcanic sedimentation and mechanical properties of mortar, Proceedings of the 76th Annual Conference

of the Japan Society of Civil Engineers, V-476, 2021. Sep.[in Japanese]

7) Masato ASAKURA, Koji YAMAMOTO, Kentaro OHNO and Atsushi UENO：Investigation on AE generation behavior in concrete with heterogeneous distribution of coarse aggregate particles under uniaxial compression loading, Proceedings of 2021 National Conference on Acoustic Emission, pp.63-66, 2021.Nov. [in Japanese]

【Publications】

1) Motoki ABE, Atsushi UENO, Kimitaka UJI and Kentaro OHNO：Basic Study on Dispersibility Design in Medium Phase based on the Properties of Polypropylene Fiber, Proceedings of the Japan Concrete Institute, Vol.43, No.1, pp.293-298, 2021.6 [in Japanese]
2) Satoshi SAITO, Kimitaka UJI, Atsushi UENO and Kentaro OHNO：Evaluation of quality variations of concrete with different viscosities when passing through rebar gaps, Proceedings of the Japan Concrete Institute, Vol.43, No.1, pp.881-886, 2021.6 [in Japanese]
3) Akihiro NAGATA, Kentaro OHNO, Kazukiyo TAMAKI, Atsushi UENO：Influence of Coarse aggregate and Saturation on the Relationship between Compressive Stress and Ultrasonic Velocity Variation in Concrete, Proceedings of the Japan Concrete Institute, Vol.43, No.1, pp.1121-1126, 2021.6 [in Japanese]
4) Narumi SHIDA, Kentaro OHNO, Kimitaka UJI and Atsushi UENO：Detection method for adhesion loss on interface between reinforcement and concrete based on elastic wave velocity structure, Proceedings of the Japan Concrete Institute, Vol.43, No.1, pp.1259-1264, 2021.6 [in Japanese]
5) Kentaro OHNO, Shinya UCHIDA, Masakazu HARUHATA and Satoshi IWANO：Damage evaluation in concrete by impact elastic wave method -debonding estimation between concrete and rebar-, Ultrasonic TECHNO, Vol.33, No.6, pp.9-13, 2021.12 [in Japanese]
6) Atsushi UENO and Kentaro OHNO：Application method of fine aggregate obtaining from volcanic sedimentation in Izu Island chain to concrete, Proceedings of symposium on utilization of volcanic sedimentation for concrete materials, Japan Concrete Institute, pp.37-40, 2022.3 [in Japanese]

【External Funding Sources】

・Collaborative research：3

【Social Contributions (Excluding confidential activities)】

・Japan Concrete Institute：2 committees
・Architectural Institute of Japan：1 committee
・The Japanese Society for Non-Destructive Inspection：6 committees

【Awards】

Encouraging prize of Annual conference：Akihiro NAGATA, Kentaro OHNO, Kazukiyo TAMAKI, Atsushi UENO ： Influence of Coarse aggregate and Saturation on the Relationship between Compressive Stress and Ultrasonic Velocity Variation in Concrete, Proceedings of the Japan Concrete Institute, Vol.43, No.1, pp.1121-1126, 2021.6 [in Japanese]

【Other Activities】

・Collaborative research with bureau of Construction Tokyo Metropolitan Government

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences

【Name】: Hiroshi SAKAI

【Position】: Associate Professor

【Research Topic】: Water and Wastewater Engineering, Water Environment Management, Water Quality Management

【Outline of research achievement】

Research from an environmental perspective on the possibility of improving the quality of tap water source water by conserving the tap water source forest owned by the Bureau of Waterworks of the Tokyo Metropolitan Government; research from a social perspective on water use in the suburbs of Yangon, Myanmar, considering the awareness of local residents; and technical research on the degradation treatment using UV light for organic matter as a precursor to disinfection byproducts, Statistical analysis on the aging of water supply infrastructure, and the generation of microplastics on road surfaces were conducted, each of which resulted in academic presentations and other outcomes.

【Presentations】

1) Guntur Adisurya Ismail and Hiroshi Sakai (2022.9.12-15) Reaction Mechanism And Toxicity Changes Of Dyes Degradation Via Photo-Fenton, International Water Association, World Water Congress, Copenhagen, Denmark
2) Yuichiro Murata, Hiroshi Sakai, and Koji Kosaka (2022.7.10) Effects of UV/PS and UV/H2O2 on Degradation of Natural Organic Matter and Formation Potential of Haloacetonitriles in Surface Water, Japan Society on Water Environment, Water and Environment Technology Conference, Online
3) Shane Htet Ko and Hiroshi Sakai (2022.6.23) Tap Water Quality And Consumtion Behaviours of the Residents from Yangon City, International Water Association, Water Safety Conference, Narvik, Norway

【Publications】

1) Keisuke Ishida, Hiroshi Sakai (2023) The effects of advanced ultraviolet/H2O2 treatment on oxidation of linear alkylbenzene sulfonate in detergent wastewater, Desalination and Water Treatment, (accepted)
2) Chisato NISHIMAGI, Masami YANAGIHARA, Yiming FANG, Hiroshi SAKAI (2023) Occurrence of Tire-Derived Microplastics (TMPs) Focusing on Driving Behavior, H2Open Journal, 6(1), pp.52-62.
3) Charles John Consignado Gunay, Katsuhide Yokoyama, Hiroshi Sakai, Akira Koizumi, Kenji Sakai (2023) Decadal changes in soil water storage characteristics attributed to forest

management in a steep watershed, Water, 2023, 15(1), 54
4) Yuichiro Murata, Hiroshi Sakai, Koji Kosaka (2022) Effects of UV/PS and UV/H2O2 on Degradation of Natural Organic Matter and Formation Potential of Haloacetonitriles in Surface Water, Journal of Water and Environment Technology, 20(6), pp.188-200.

【External Funding Sources】

• JSPS Kakenhi, Deployment of Selective Water Treatment Technology Using Sulfate Radicals to Control Disinfection Byproducts, PI, FY2022-2024

【Social Contributions (Excluding confidential activities)】

Member of IWA (International Water Association), ACS (American Chemical Society)

【Awards】

None

【Other Activities】

None

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences

【Name】: Tetsuya Shintani

【Position】: Associate professor

【Research Topic】: Coastal engineering, hydraulic engineering

We estimated non-uniform wind fields over the reservoir using a deep learning model and the numerical weather forecasting model WRF and evaluated the effect of the wind non-uniformity on mass transport in the reservoir. Also, to understand the wave force acting on coastal structures, we developed 3D numerical models based on SPH and LBM methods. We submitted papers with the above topics and accepted in Japanese and international journals. The papers listed below are the accepted papers written in English.

【Presentations】

【Publications】

1) Reden Armand MALLARE, Tetsuya SHINTANI and Katsuhide YOKOYAMA, ESTIMATION OF NON-UNIFORM WIND FIELD OVER A MEANDERING RESERVOIR, Journal of Japan Society of Civil Engineers Ser B1 (Hydraulic Engineering), Vol.78(2), pp. I_1039-I_1044, 2022.
2) Hieu Ngoc Le and Tetsuya Shintani, NUMERICAL INVESTIGATION ON INHOMOGENEOUS WIND AND ITS EFFECTS TO MASS TRANSPORT, Journal of Japan Society of Civil Engineers Ser B1 (Hydraulic Engineering), Vol.78(2), pp. I_1045-I_1050, 2022.
3) Coriolis effects on wind-driven upwelling in enclosed basins, Continental Shelf Research, https://doi.org/10.1016/j.csr.2023.104956, 2023.
4) Hieu Ngoc Le, Tetsuya Shintani, Keisuke Nakayama, A Detailed Analysis on Hydrodynamic Response of a Highly Stratified Lake to Spatio-Temporally Varying Wind Field, Water, 15(3), 565; https://doi.org/10.3390/w15030565, 2023.

【External Funding Sources】

JSPS KAKENHI (C) Principal Investigator, FY2020-2022

JSPS KAKENHI (B) Co-Investigator, FY2022-2024

【Social Contributions (Excluding confidential activities)】

JSCE member

【Awards】

None

【Other Activities】

None

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Hitoshi NAKAMURA
【Position】: Associate Professor
【Research Topic】: Structural Engineering, Bridge Engineering, Engineering of Hybrid Structures
【Outline of research achievement】

Aiming primarily at bridges and steel structures in infrastructures, the survey, research and development have been performed as follows:

(1) Study on material and structural properties of GFRP members
(2) Study on enhancement of fatigue durability for welded joints using externally-bonded CFRP
(3) Seismic retrofitting of circular steel bridge piers by externally bonded carbon fiber sheets
(4) Development of repair and strengthening method for steel structures using VaRTM technique
(5) Evaluation of fatigue durability and debonding in adhesively bonded joints
(6) Investigation research on history of material, structure and design for bridges, and evaluation as modern cultural heritages in civil engineering

As a result, the fundamental data and valuable information for rational design, construction and maintenance in infrastructures have been obtained.

【Presentations】

1) Kumiko Kiyono, Hitoshi Nakamura, Visal Thay, Hisakazu Horii: Improvement and evaluation of variations in adhesive strength under combined stress, Proc. of the 77th Annual Conference of JSCE, I-285, 2pages, Sept. 2022. [in Japanese]
2) Visal Thay, Kumiko Kiyono, Hitoshi Nakamura, Hisakazu Horii: Evaluation of tensile creep lifetime of adhesively bonded joints, Proc. of the 77th Annual Conference of JSCE, I-286, 2pages, Sept. 2022.
3) Kyosuke Takahashi, Hitoshi Nakamura, Visal Thay, Hisakazu Horii: Experimental study on fatigue durability of adhesive joints under cyclic bending load, Proc. of the 77th Annual Conference of JSCE, I-287, 2pages, Sept. 2022. [in Japanese]
4) Atsushi Matano, Hitoshi Nakamura, Visal Thay, Takahiro Matsui: Effect of weld residual stress and bonding materials on fatigue crack propagation in welded joints repaired by externally bonded CFRP, Proc. of the 77th Annual Conference of JSCE, I-288, 2pages, Sept. 2022. [in Japanese]
5) Kosuke Nakayama, Shingo Iwashita, Hitoshi Nakamura: Fundamental study on estimation of unsteady aerodynamic on bridge cross-sections by CFD and flutter limit wind speeds on suspension bridges, Proc. of the 77th Annual Conference of JSCE, CS3-29, 2pages, Sept. 2022. [in Japanese]
6) Shingo Iwashita, Kosuke Nakayama, Hitoshi Nakamura: Estimation of unsteady aerodynamic forces using CFD and variation of flutter wind speed on suspension bridges with angle of attack, Proc. of the 77th Annual Conference of JSCE, I-168, 2pages, Sept. 2022. [in Japanese]

【Publications】

1) Atsushi Matano, Hitoshi Nakamura, Visal Thay, Takehiko Tsubokawa, Takehiro Matsui: Repair effect of externally bonded CFRP on propagation life of fatigue cracks initiated at in-plane welded gusset joints, IABSE Symposium Prague 2022, 8pages, May 2022.
2) Kumiko Kiyono, Thay Visal, Hitoshi Nakamura, Hisakazu Horii: Fabrication and its evaluation of testing device considering combined stress of bonded joints, IABSE Symposium Prague 2022, 8pages, May 2022.
3) Kumiko Kiyono, Hitoshi Nakamura, Visal Thay, Hisakazu Horii: Improvement and evaluation of variations in static strength of bonded joints under combined stress, JSCE, Proc. of the 9th Symposium on FRP Hybrid Structures and Bridges, pp.1-8, Nov. 2022. [in Japanese]
4) Atsushi Matano, Hitoshi Nakamura, Visal Thay, Takahiro Matsui: Effect of adhesive debonding in CFRP repair on fatigue crack growth rates, JSCE, Proc. of the 9th Symposium on FRP Hybrid Structures and Bridges, pp.34-41, Nov. 2022. [in Japanese]
5) Kyosuke Takahashi, Hitoshi Nakamura, Thay Visal, Hisakazu Horii: Experimental study on fatigue strength of adhesive bonded joints under cyclic bending stress, JSCE, Proc. of the 9th Symposium on FRP Hybrid Structures and Bridges, pp.48-57, Nov. 2022. [in Japanese]
6) Ryo Onodera, Hitoshi Nakamura, Kensuke Kobayashi, Koichi Hanamura, Toshiyuki Niikura: Experimental study on high-strength bolted joints of GFRP plates by adhesively bonded steel plates, JSCE, Proc. of the 9th Symposium on FRP Hybrid Structures and Bridges, pp.129-135, Nov. 2022. [in Japanese]
7) Kumiko Kiyono, Hitoshi Nakamura, Visal Thay, Hisakazu Horii: Fabrication of a simple test device for evaluation of adhesive strength under combined stress and verification of its application, Journal of Structural Engineering, Vol.69A, pp.625-636, Mar. 2023. [in Japanese]
8) Kunitaro Hashimoto, Daichi Nii, Hitoshi Nakamura: Experimental study on shear strength evaluation of channel members made of GFRP, Journal of Structural Engineering, Vol.69A, pp.943-952, Mar. 2023. [in Japanese]

【External Funding Sources】

・JSPS KAKENHI, Grant Number: 21K04238, Investigator, Development of advanced strengthening technique for steel structures using externally bonded FRP members, 2021-2023.

【Social Contributions (Excluding confidential activities)】

・JSCE Committee of Hybrid structure, Member and Secretary
・JSCE Committee of Hybrid structure, Subcommittee on Continuing education in hybrid structures, Chair
・JSCE Committee of Hybrid structure, Subcommittee on Guidelines for performance-based design of hybrid structures, Member
・JSCE Committee of Hybrid structure, Subcommittee on evaluation of green and gray infrastructures, Member
・JSCE Committee of Hybrid structure, Subcommittee on Design and maintenance of FRP composite structures, Member and Secretary
・JSCE Committee of Structural engineering, Member

・JSCE Committee of Structural engineering, Subcommittee on Continuing Education, Member
・JSCE Committee of Steel structures, Member
・JSCE Committee of Steel structures, Research committee on Update and utilization of database of historical steel bridges, Chair
・JSCE Committee of Steel structures, Research committee on Repair and strengthening of steel bridges, Member
・JSCE Committee on the History of civil engineering, Subcommittee on Historical and cultural value of post-war Infrastructures, Member
・JSCE Committee on the Construction management, Research committee on Public design competition, Member
・JSSC Subcommittee on future strategy of steel structures, Chair
・Japan Steel Bridge Engineering Association, Research Group on Design method of steel bridges considering maintenance, Chair
・FRP Hydraulic Gates Engineering Association, Advisor
・The Japan Reinforced Plastics Society, Director
・Tokyo Metropolitan University Alumni Association, Representative

【Awards】

(1) JSCE, the 9th Symposium on FRP Hybrid Structures and Bridges, Excellent Presentation Award
Kumiko Kiyono, Hitoshi Nakamura, Visal Thay, Hisakazu Horii: Improvement and evaluation of variations in static strength of bonded joints under combined stress, JSCE, Proc. of the 9th Symposium on FRP Hybrid Structures and Bridges, pp.1-8, Nov. 2022. [in Japanese]

【Other Activities】

(1) Hitoshi Nakamura: Civil Engineering Works - Bridges, Britannica International Yearbook 2021, Britannica Japan Co., Ltd., pp.200-201, April 2022. [in Japanese]

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Tomohisa KAMADA
【Position】: Assistant Professor
【Research Topic】: Durability and maintenance of RC structures
【Outline of research achievement】
1) Various experiments were conducted to understand the water permeability in reinforced concrete, and it was clarified that the water permeability differs greatly between reinforced concrete and unreinforced concrete, and that water selectively penetrates the area directly under the reinforcing bars.
2) 3D microstructural observation of pore structure of hardened cement was conducted using FIB-SEM, and the relationship between the 3D information of the pore structure and the water permeability was investigated.

【Presentations】
1) Naoto Suzuki, Toshiharu Kishi, Tomohisa Kamada : Research on a simple evaluation method for surface layer quality of new concrete structures, Proceedings of JSCE annual meeting 2022, V-47, 2022.9
2) Tomoki Kaneko, Jiro Nakazawa, Nobuyuki Sonoda, Tomohisa Kamada, Kazuhiro Tsuno : Experimental study on the effect of vertical reinforcement on the fatigue durability of lightweight floor slabs with expansive admixture (Part 2), Proceedings of JSCE annual meeting 2022, V-277, 2022.9
3) Jirou Nakazawa, Toshiharu Kishi, Tomohisa Kamada, Kazuhiro Tsuno : Experimental study on the effect of vertical reinforcement on the fatigue durability of lightweight floor slabs with expansive admixture (Part3), Proceedings of JSCE annual meeting 2022, V-278, 2022.9
4) Hiroto Nagashima, Kentaro Ohno, Atsushi Ueno, Tomohisa KAMADA : Evaluation of microstructure in mortar during temperature history curing by ultrasonic and AE methods,2nd International Conference on Engineering and Agro-Industrial Technology, 2023.2

【Publications】
1) Abdul Mannan Yousfani, Tomohisa Kamada, Toshiharu Kishi and Farhan Ahmed Shaikh: Incorporation of Bokashi Fermented Leaves (BFL) to Improve the Algal Growth on Concrete Surface, Proceedings of The 12th International Civil Engineering Conference (ICEC 2022), 2022.9
2) Concrete Engineering Series 131, JSCE, 2022.11

【External Funding Sources】
・JSPS KAKENHI Grant Number 21KK0072
・JSPS KAKENHI Grant Number 20K14800

【Social Contributions (Excluding confidential activities)】

・JSCE Concrete Committee / Sub-Committee

・JCI Kanto branch / Young researcher's association 21

・Young researcher's association in cement

【Awards】

Nothing

【Other Activities】

Nothing

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences

【Name】: Kosuke Kawata

【Position】: Assistant Professor

【Research Topic】: Tunneling, Rock mechanics, Maintenance, Earthquake Engineering

【Outline of research achievement】

Research on the design, construction and maintenance of tunnels were done on the following topics.

1) The behavior of existing mountain tunnels during earthquakes and countermeasures against earthquakes.
2) The mechanical behavior of rock bolts made of different materials
3) The application conditions, methods and effects of reinforcement measures for existing tunnels
4) The effectiveness of auxiliary construction methods for mountain tunnels
5) The mechanical behavior of shield tunnel segments

【Presentations】

1) Experimental study on the effect of vibration directions on the behavior of mountain tunnel portal area, A.Matsuoka, K.Kawata, N.Isago, K.Nishimura, H.Yagi, H.Kitamura, K.Nakajima, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
2) Numerical analysis study of the mechanical behavior and the influence on ground of vertical prereinforcement, T.Amemiya, K.Kawata, N.Isago, K.Nishimura and H.Shiroma, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
3) Experimental study on the relationship between invert shape and tunnel structure strength, R.Nakazato, T.Natsume, K.Kawata, N.Isago, T.Otsu, Y.Mikami and S.Tanabe, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
4) Analytical study on the effect of the pilot tunnel and tunnel structural stability in bad ground, K.Shinoda, N.Isago, T.Omori and K.Kawata, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
5) Experimental study on the large deformation behavior of shield tunnels considering joint characteristics, K.Kurahashi, K.Kawata and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
6) Influence of the construction joints on the mechanical behavior of tunnels, A.Fujii, K.Kawata and N.Isago, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
7) Numerical analysis study on the relationship between invert shape and tunnel structure strength, T.Natsume, R.Nakazato, K.Kawata, N.Isago, T.Otsu, Y.Mikami and S.Tanabe, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9
8) Study on the mechanical properties of rock bolts on pull-out behavior, T.Matsumoto, K.Kawata, N.Isago, S.Morimoto, D.Awaji and T.Okabe, Proceedings of Japan Society of Civil Engineers (JSCE) No.78 Annual Meeting, 2022.9

【Publications】

1) Experimental study on the relationship between invert shape and tunnel structure strength, N.Nakazato, T.Natsume, K.Kawata, N.Isago, T.Otsu, Y.Mikami and S.Tanabe, Proceedings of the 32nd Annual Conference on Tunnel Engineering, JSCE, 2022.11

2) Performance of Rock Bolt with Different Material by On-Site And Model Experiment, N. Isago, U. Goto, T. Matsumoto, K. Kawata, S. Morimoto, D. Awaji and T. Okabe, Proceedings of the WTC2022 ITA-AITES World Tunnel Congre, 2022.9

3) Rational Design Concept for Inverted Arch Structure for Mountain Tunnel, T. Natsume, Y. Ishii, R Nakazato, T.Otsu, K.Kawata and N.Isago, Proceedings of EUROCK2022 an ISRM Regional Symposium, 2022.9

4) Consideration of the mechanical behaviour and the influence on ground of vertical prereinforcement, T. Amemiya, T. Nagata, N. Isago, K. Kawata, H Shiroma and K Nishimura, Proceedings of EUROCK2022 an ISRM Regional Symposium, 2022.9

5) Earthquake damage and seismic design of tunnels ”Conventional methods・TBM・Cut and cover”, Collaboration, Tunnel Library, Vol.33, JSCE, 2023.3

【External Funding Sources】

Subsidy (Japan Tunneling Association)

【Social Contributions (Excluding confidential activities)】

Member of Tunnel Engineering Committee, Japan Road Association

Member of Tunnel Engineering Committee, Japan Society of Civil Engineers

Member of Rock Mechanics Committee, Japan Society of Civil Engineers

Member of ITA Committee, Japan Society of Civil Engineers

Chair of Young Member Group, Japan Tunneling Association

【Awards】

None

【Other Activities】

None

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Yusuke KISHI
【Position】: Assistant Professor
【Research Topic】: Structural Engineering, Disaster Mitigation, Seismic Engineering
【Outline of research achievement】

1) Research on Coupled Buckling Strength Evaluation for Compression Member of Steel Bridges. H-type cross-section specimens were fabricated based on the existing steel truss bridges, and compression loading tests were conducted in order to evaluate the ultimate strength of coupled buckling strength. In order to collect the data of new steel material and comparing with conventional steel material, the specimens were fabricated by two types of steel materials, respectively. Initial imperfections of the specimen witch affect the design strength were measured and numerical analysis was conducted to predict the load carrying capacities in advance. As the result of compression loading tests, it is confirmed that the design criteria of road and rail way bridges without safety factor are stipulated significantly on the safe side.

【Presentations】

1) Yusaku Kaneko, Soichiro Wada, Jun Murakoshi, Yusuke Kishi, Kuniei Nogami, Shoichi Komine: Experimental study on lateral load carrying capacity of corroded rivet type girder ends, Proc. of the 77th Annual Conference of JSCE, I-006, September, 2022. (in Japanese)
2) Hiroaki Akai, Jun Murakoshi, Yusuke Kishi, Hideo Tokita: Study on simplified estimation method of fatigue live load stress for fatigue evaluation of existing steel I -girder bridges, Proc. of the 77th Annual Conference of JSCE, I-069, September, 2022. (in Japanese)

【Publications】

1) Tomoki Katayama, Jun Murakoshi, Kuniei Nogami, Yusuke Kishi: Damage Mechanism and Load-Carrying Capacity at Girder End of Existing Steel Girder Bridge Under Seismic Lateral Force, International Journal of Steel Structures, volume 22, pp.1864–1875, 2022.
2) Subcommittee on Standard Specifications for Steel and Composite Structures, Committee on Steel Structures, JSCE: Standard Specifications for Steel and Composite Structures, I General Provision, II Structural Planning, III Design, Edition 2022, JSCE, December 2022.

【External Funding Sources】

1) Research and Educational Donations for Steel structures, The Japan Iron and Steel Federation, 2022.
2) Specific Research Donations for Steel structures, The Japan Iron and Steel Federation, 2022.

【Social Contributions (Excluding confidential activities)】

1 Subcommittee on investigation of application of 3D FE analysis for structural performance

verification of steel bridges, Committee on Steel Structure, Japan Society of Civil Engineers.

2) Subcommittee on survey and research for seismic performance verification of steel bridges using high-precision numerical analysis method, Committee on Steel Structure, Japan Society of Civil Engineers.

3) Subcommittee for Standard Specifications for Steel and Composite Structure, Committee on Steel Structure, Japan Society of Civil Engineers.

4) Subcommittee of Young Structural Engineers, Committee on Structural Engineering, Japan Society of Civil Engineers.

5) Annual Conference Program Organization, General Affairs Department, Japan Society of Civil Engineers.

6) Subcommittee on Rationalization Design, Committee on Strengthening and Life Elongation Research for Steel Bridges, Japan Society of Steel Construction.

【Awards】

None

【Other Activities】

Research Member of Research Center for Volcanic Hazards and Their Mitigation, Tokyo Metropolitan University.

Annual Report (English Version)

【Department】: Department of Civil and Environmental Engineering, Faculty of Urban Environmental Sciences
【Name】: Gubash AZHIKODAN
【Position】: Assistant Professor
【Research Topic】: Estuarine hydro- and morphodynamics, Cohesive sediment transport, Phytoplankton dynamics
【Outline of research achievement】

1) The long-term changes in the riverbed elevation of the highly turbid macrotidal Chikugo River estuary, Japan were studied, and identified the dominant influencing factors on erosion, transport, and deposition of sediments in the estuary.
2) The seasonal and tidal variations of estuarine turbidity maximum (ETM) in the monsoon-affected macrotidal Tanintharyi River estuary (TRE), Myanmar were studied and analyzed the effect of tidal and river forcing on the ETM dynamics of TRE.
3) The effect of neap-spring transition on the spatial and temporal changes in the cell size distribution of different phytoplankton species and their size-based habitats distribution were investigated in the highly turbid macrotidal Chikugo River estuary, Japan.
4) Field survey was conducted in the Ashtamudi Estuary, India during a neap-spring transition in the post-monsoon season (February 2023) to study the spatial and tidal (neap-spring) variations of salinity intrusion, sediment transport, phytoplankton, and other water quality parameters. During the survey, the vertical profile of salinity, turbidity and light intensity was measured in the mid-channel from the downstream to the upstream of the estuary using a conductivity, temperature, depth (CTD) probe with an optical backscatter sensor and an ultra-miniature light intensity recorder. Additionally, water samples were collected from the surface layers of each station for analyzing the water quality parameters.

【Presentations】
1) Hlaing, N.O., Azhikodan, G., Yokoyama, K.: Seasonal and tidal variations of estuarine turbidity maximum (ETM) at Tanintharyi River estuary. 67th Annual Conference on Hydraulic Engineering in Ehime, November 2022.
2) Nwe, L.W., Azhikodan, G., Yokoyama, K.: Changes in size distribution of phytoplankton in response to tidal variability in the Chikugo River estuary. 67th Annual Conference on Hydraulic Engineering in Ehime, November 2022.
3) Phyu, P.E., Yokoyama, K., Azhikodan, G.: Long-term (1953-2020) Morphological Changes of Chikugo River, Japan. 19th Annual Meeting of Asia Oceania Geosciences Society (AOGS), August 2022.

4) Inoue, H., Yokoyama, K., Azhikodan, G.: Numerical Modelling of Saltwater and Freshwater Flow Dynamics at the Confluence of Tidal Rivers. 19th Annual Meeting of Asia Oceania Geosciences Society (AOGS), August 2022.
5) Hlaing, N.O., Yokoyama, K., Azhikodan, G.: Neap-spring tidal and seasonal variations in salinity intrusion and mixing condition at the tropical macrotidal Tanintharyi River estuary. 19th Annual Meeting of Asia Oceania Geosciences Society (AOGS), August 2022.
6) Gayathri, H., Sreelekshmi, S., Gowtham, M., Gopika, S., Priya, K.L., Azhikodan, G., Yokoyama, K.: A New Index for the Assessment of Trophic Status of Estuarine System. 19th Annual Meeting of Asia Oceania Geosciences Society (AOGS), August 2022.
7) Nwe, L.W., Yokoyama, K., Azhikodan, G.: Phytoplankton habitats response to the variability of estuarine hydrodynamic condition in the macrotidal Chikugo River estuary. 19th Annual Meeting of Asia Oceania Geosciences Society (AOGS), August 2022.

【Publications】

1) Nwe, L.W., Yokoyama, K., Azhikodan, G.* Phytoplankton habitats and size distribution during a neap-spring transition in the highly turbid macrotidal Chikugo River estuary. Science of The Total Environment 850, 157810. December 2022. https://doi.org/10.1016/j.scitotenv.2022.157810
2) Hlaing, N.O., Azhikodan, G.*, Yokoyama, K. Seasonal and tidal variations of estuarine turbidity maximum (ETM) at Tanintharyi River estuary. Journal of Japan Society of Civil Engineers, Ser. B2 (Hydraulic Engineering) 78(2), 1123-1128. November 2022. https://doi.org/10.2208/jscejhe.78.2_I_1123
3) Nwe, L.W., Azhikodan, G., Yokoyama, K. Changes in size distribution of phytoplankton in response to tidal variability in the Chikugo River estuary. Journal of Japan Society of Civil Engineers, Ser. B2 (Hydraulic Engineering) 78(2), 1069-1074. November 2022. https://doi.org/10.2208/jscejhe.78.2_I_1069

【External Funding Sources】

1) Principal Investigator, JSPS KAKENHI Grant-in-Aid for Early-Career Scientists, Analysis of morphodynamic evolution in a meandering estuarine channel in the context of climate change, April 2020 to March 2024.
2) Member (PI - Katsuhide Yokoyama), Advanced Research project, Prevention of water pollution caused by the floating waste disposal from mega cities in the context of global warming and COVID19 lockdowns, Tokyo Metropolitan Government, April 2022 to March 2025.

【Social Contributions (Excluding confidential activities)】

- Member, Japan Society of Civil Engineers
- Member, European Geosciences Union
- Member, Asia Oceania Geosciences Society

- Main convener of the session entitled “OS20 - Recent Trends in Estuarine Hydro- and Morphodynamics in the Context of Climate Change”, AOGS 2022 Annual Meeting, 04 August 2022 (Online). Conveners: Azhikodan, G., Priya, K.L., Yokoyama, K., Shintani, T. https://www.asiaoceania.org/aogs2022/public.asp?page=sessions_and_conveners.asp
- Member of the Advisory Committee, 6th International Conference on Modeling & Simulation in Civil Engineering (ICMSC) 2022, Organized by The Department of Civil Engineering, TKM College of Engineering, Kollam-691005, Kerala, India. https://icmsc.org.in/advisory-committee.php
- Peer-reviewed manuscripts submitted in high-impact factor journals like Earth's Future (IF: 8.852), Science of the Total Environment (IF: 10.754), Estuarine, coastal and shelf science (IF: 3.229), Continental Shelf Research (IF: 2.629), etc.
- Peer Reviewed the proposal submitted under the UP System -Enhanced Creative Works and Research Grant (ECWRG), University of the Philippines Los Baños, Philippines.

【Awards】

Hlaing, N.O., Azhikodan, G.*, Yokoyama, K. Seasonal and tidal variations of estuarine turbidity maximum (ETM) at Tanintharyi River estuary. Best International Paper Award" in the Annual Conference on Hydraulic Engineering, Japan Society of Civil Engineers (JSCE) in November 2022.

【Other Activities】

- Conducted online internship in the field of "Hydrodynamic Studies on Estuaries" during October 2022-February 2023 for six undergraduate students from TKM College of Engineering, Kollam, Kerala, India.
- Delivered a lecture about “Tokyo Metropolitan University (TMU) and the opportunities for higher studies in TMU” during the online workshop entitled "Dialogue with Indian Students: Opportunities in Japan" held on 16th February 2023 organized by the Embassy of India, Tokyo (Govt. of India).