

# 5th JSCE Concrete Committee Webinars - Frontiers of Concrete Technology (FCT)

## Advances on Life-Cycle Bridge Engineering

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The Concrete Committee of the Japan Society of Civil Engineers (JSCE) has started the international webinar series “Frontiers of Concrete Technology” (FCT) from 2021. It is intended to hold the webinar 2 or 3 times a year. The seminar aims to convey Japan’s cutting-edge research in concrete technology to the world. A theme is set for each seminar, and one Japanese researcher and one overseas researcher working on the theme are invited to deliver the lectures. The seminars provide time for a panel discussion, in which the overall history, the present status, and the future direction of that field of research are discussed.

This seminar was the fifth and held on April 13th, 2023. The theme was “Advances on Life-Cycle Bridge Engineering”. The invited speakers were Professor Fabio Biondini from Politecnico di Milano(Italy), and Professor Mitsuyoshi Akiyama from Waseda University(Japan). Both are distinguished researchers worldwide in the field of advances on life-cycle bridge engineering based on risk, reliability, and resilience.

5th JSCE Concrete Committee Webinar  
**Frontiers of Concrete Technology**  
Advances on Life-Cycle Bridge Engineering

Date & Time: April 13<sup>th</sup> 2023, 16:00-18:00 (JST/UTC+9:00)

16:00-16:10 Introduction of JSCE  
16:10-16:40 Presentation by Prof. Fabio Biondini, and Q&A  
16:40-17:10 Presentation by Prof. Mitsuyoshi Akiyama, and Q&A  
17:10-18:00 Panel Discussion

**Prof. Fabio Biondini**  
2016-present Professor, Politecnico di Milano, Italy  
2004-2016 Associate Professor, Politecnico di Milano, Italy  
2000-2004 Research Associate, Politecnico di Milano, Italy

Fabio Biondini, Ph.D., P.E., F.SEI, F.ASCE, is Professor of Structural Engineering and Chair of the Civil Engineering Degree Programs at Politecnico di Milano. His research interests cover several topics, including life-cycle risk, reliability, robustness, redundancy, and resilience of deteriorating structures and infrastructure systems, with emphasis on bridges and bridge networks, authoring about 350 scientific publications. Professor Biondini is the Chair of ASCE-SEI Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural Systems, co-founding Executive Board member of IALCCE, Executive Committee member of IABMAS, and served in leadership roles several international scientific and technical committees. He is Associate Editor/Editorial Board member of several journals, including Structure and Infrastructure Engineering (Taylor & Francis), Structural Safety (Elsevier), Engineering Structures (Elsevier), and Journal of Structural Engineering (ASCE). He is recipient of honors and awards from academic institutions and professional associations, including IABMAS, IABSE, IALCCE, IFIP, SEI & ASCE. Webpage: <https://biondini.faculty.polimi.it>

**Prof. Mitsuyoshi Akiyama**  
2011-present Professor, Waseda University, Japan  
2004-2011 Associate Professor, Tohoku University, Japan  
2001-2004 Lecturer, Tohoku University, Japan

Dr. Mitsuyoshi Akiyama is Professor at Waseda University. He received a doctorate in Civil Engineering from Tohoku University in 2001. His main research interests are in the life-cycle performance assessment of civil engineering systems under multiple hazards. As scientific community service activities, he has been serving as a Managing Editor of Structure and Infrastructure Engineering and an Associate Editor of ASCE Journal of Bridge Engineering. He also serves on the editorial boards of two additional journals, Structural Safety and International Journal of Earthquake and Impact Engineering. Dr. Akiyama has been involved in the activities of the ASCE Technical Council on Life-Cycle Performance, Safety, Reliability and Risk of Structural System for more than 10 years. He is Secretary of Executive Committee of IABMAS, Executive Committee Member of IALCCE and Vice Chair of Commission 6-Sustainability and Chair of Task Group 6.1-Disaster Waste Management in IABSE. Webpage: [http://www.f.waseda.jp/akiyama617/professor/index\\_e.html](http://www.f.waseda.jp/akiyama617/professor/index_e.html)

Concrete Committee, Japan Society of Civil Engineers (JSCE)  
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### Seminar Flyer

The seminars can be viewed on the JSCE YouTube channel.

The fifth seminar: <https://www.youtube.com/watch?v=68gB1UYJrPA>

The number of participants in the seminar was about 120. As it was a webinar, there were participants from throughout the world, mainly from Asia. The seminars can be viewed on the JSCE YouTube channel. In the seminar, Prof. Fabio introduced the early bridge assessment and risk-based prioritization for the infrastructures. He also presented the experimental validation of computational models on existing bridges. Prof. Akiyama introduced the lesson learnt from past large earthquakes in Japan and emphasize the importance of resilience and sustainability of bridges and bridge networks under multiple hazards. He presented his latest results regarding the structural performance assessment of aging RC members based on observational corrosion crack width using machine learning. In the panel discussion, the validity and reliability of life cycle models and prospective of the lifecycle bridge engineering.

The report of the past seminars is below.

First & Second Seminar

[http://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter63/Newsletter63\\_files/FCT.pdf](http://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter63/Newsletter63_files/FCT.pdf)

Third Seminar

[https://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter65/index\\_files/data/report.pdf](https://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter65/index_files/data/report.pdf)

Fourth Seminar

[https://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter67/index\\_files/FCT\\_JointSeminar/4th\\_FCT\\_Report.pdf](https://www.jsce.or.jp/committee/concrete/e/newsletter/newsletter67/index_files/FCT_JointSeminar/4th_FCT_Report.pdf)

YouTube channel.

First seminar: <https://www.youtube.com/watch?v=IP65Dudd6tk>

Second seminar: <https://www.youtube.com/watch?v=ArU-x-oyGig>

Third seminar: <https://www.youtube.com/watch?v=hwfl7mrs7-I>

Fourth seminar: <https://www.youtube.com/watch?v=SLrs46PqG7Y&t=3s>