

## Risk, resilience and sustainability informed integrity management of infrastructure systems

### Decarbonizing infrastructure by extending asset service life using Computer Vision

**Speaker: Dr. Jan Winkler, ATKINS / DES**

**Host: Dr. Jianjun Qin, Shanghai Jiaotong University**

**Time: 12.01.2023, 14:00 – 15:00 Central European Time**

#### Lecture outline:

Maintenance of aging infrastructure (buildings, bridges, tunnels, etc.) is a significant part of both public, and private-entities' budgets. The worldwide infrastructure and property maintenance costs are estimated to be EUR 180 billion per year. These costs depend on industry sector, age of the assets and governmental regulations. They highly affect the financial situation of public bodies and the profitability of enterprises. Informed decisions on timely intervention for effective bridge maintenance activities rely on good quality, accurate and reliable asset condition data. The principal difficulty with adding several traditional monitoring systems is that they produce vast quantities of inconsistent data and are labor intensive. Gathering information requires structural health monitoring (SHM) and inspection and, for it to be useful, it must be accurate, inexpensive and easy to interpret, and must avoid interfering with traffic flows whether rail or highways. This lecture introduces scalable structural monitoring technique called Digital Image Correlation (DIC) that is increasingly being used by asset managers of complex infrastructure systems to support decision-making process and asset management strategy.

#### About the speaker:

Dr Jan Winkler is a Professional Head of Structural Health Monitoring at Atkins SNCL and co-CEO at Digital Engineering Solutions. He graduated with PhD from Technical Univ. of Denmark (DTU) and was a visiting researcher at Univ. of Texas at Austin where he conducted studies on computer vision and its applicability in structural monitoring. Jan is also a co-Chair of the International Federation for Structural Concrete (fib) TG 5.10 focusing on monitoring and inspection of infrastructure. He was awarded International Association for Bridge and Structural Engineering (IABSE) Award and IASS Hangai Prize by International Association for Shell and Spatial Structures. He acts as an external lecturer & censor at Tech. Univ. of Denmark and a reviewer for International Assoc. for Bridge and Structural Eng. Journal (IABSE).



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