



Ifsttar – Nantes

Allée des Ponts et Chaussées
Route de Bouaye
44344 Bouguenais, France

GPS : 47°09'18.1"N, 1°38'18.6"W

[Google map](#)



Application, Registration and Contact

Important dates

- **March 1, 2019:** Deadline for application. [Submit your application online.](#)
- **March 8, 2019:** Notification of acceptance.
- **March 15, 2019:** Deadline for registration.

Registration fee: €150 VAT.

The language of the training school is English.

For more information, please visit <http://trainingschool.infrastar.eu/>
or email infrastar@ifsttar.fr

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Innovation and Networking for Fatigue and Reliability Analysis of Structures – Training for Assessment of Risk

The Infrastar training schools aim to provide lectures and hands-on trainings to Master and PhD students, early-stage researchers, young professionals on all aspects of asset management of civil infrastructures with respect to fatigue of materials. The participants will get additional knowledge about their own field but also about what is performed beforehand and afterwards.



SAVE THE DATE

08 – 12 April 2019 at Ifsttar in Nantes, France

The courses will provide multi-disciplinary and intersectoral basic concepts in three core fields, ranging from the design to the dismantling of the structures (bridges and wind turbines):

1. Monitoring and auscultation.
2. Structural and action models.
3. Reliability, risk and decision analyses.

A participant who successfully has taken part in the Infrastar training schools will be able to understand:

1. How to smarten the structures and its benefits.
2. How to model structural and material behaviours under loading.
3. How to develop, perform and assess structural reliability, risks and the value of structural information.

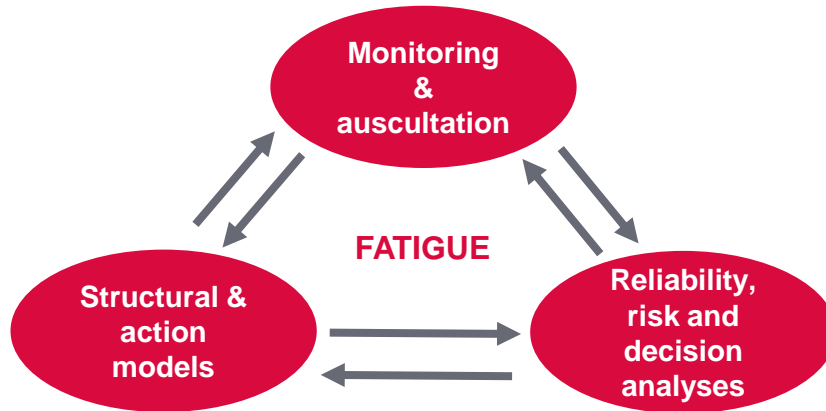


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Organising committee:

- Dr Odile Abraham and Dr Hakim Ferria ([Ifsttar](#))
- Prof. Ahmed Loukili ([SPI](#) – Engineering sciences graduate school)
- Prof. Mario Südholt ([MathSTIC](#) – Mathematics, Information and Communication Sciences, and Technologies graduate school)



International scientific committee:

Monitoring and auscultation

- Dr Odile Abraham ([Ifsttar](#))
- Pascal Collet ([Total](#))
- Dr Ernst Niederleithinger ([BAM](#))
- Dr Marc Thiele ([BAM](#))

Structural and action models

- Prof. Jan Bien ([Wroclaw University of Technology](#))
- Prof. Eugen Brühwiler ([EPFL](#))
- Dr Franziska Schmidt ([Ifsttar](#))

Reliability, risk and decision analyses

- Prof. Franck Schoefs ([University of Nantes](#))
- Prof. John Dalsgaard Sørensen ([Aalborg University](#))
- Assoc. Prof. Sebastian Thöns ([DTU](#))

Keynote lectures

- Overview on Non-Destructive Testing methods
Guest lecturer: Prof. John Popovics (University of Illinois, USA)
- Overview of fatigue in concrete
Dr Marc Thiele (BAM)

1. Monitoring and auscultation

- From sensors to useful signals for concrete evaluation and monitoring
Dr Odile Abraham (Ifsttar)
- From signals to useful parameters: combination and data fusion
Probability of Detection (PoD), Receiver Operating Characteristic (ROC)
Dr Ernst Niederleithinger (BAM)
- Teamwork*, demonstrations and exercises
 - Group on Acoustic Emission: How to locate and detect cracking?
 - Group on Fibre Optics: How to size a crack?
 - Group on Time of Flight: How to monitor and get relevant information about fatigue with ultrasonic conventional measurements?
 - Group on Coda Wave Interferometry: A new very sensitive monitoring tool for concrete.

2. Structural and action models

- Fatigue verification of structural elements based on data from monitoring Fatigue of R-UHPFRC structural elements
Prof. Eugen Brühwiler (EPFL)
- Assessment of extreme values of effects in structures
Updating of structural models
Dr Franziska Schmidt (Ifsttar)
- Teamwork*

3. Reliability, risk and decision analyses

- Uncertainty and structural reliability assessment
Prof. John Dalsgaard Sørensen (AAU)
- Decision and structural information analyses
Assoc. Prof. Sebastian Thöns (DTU)
- Teamwork*

*Teamwork

Teamwork will play the role of thread by connecting the 3 major topics of the training to provide a comprehensive view and practical handles from sensors to decision.

Complementary skills

- Intellectual property rights and innovation, European patents
Alice Pezard (magistrate)
- Economical analysis and societal issues: transport in economy, women in transport, greenhouse gas
Dr Ariane Dupont-Kieffer (University Paris 1 Panthéon-Sorbonne)