



**CENTRALE
NANTES**

1 rue de la Noë
44321 Nantes, France

Founded in 1919, Centrale Nantes is a French engineering school. Its undergraduate, Master and PhD programmes are based on the latest scientific and technological developments and the best management practices.



Application, Registration and Contact

The language of the training school is English.

Important dates

- **March 11, 2020:** Deadline for application. [Submit your application online.](#)

Applications are reviewed on a rolling basis until the deadline by the organising committee and selected based on relevance of interest.

- **March 14, 2020:** Deadline for registration.

Registration fee: 150€ (excluding VAT)

For more information, visit

<http://trainingschool.infrastar.eu/>

or email infrastar@ifsttar.fr

Know more about the Infrastar project. Visit the [website](#) and [subscribe](#) to the newsletter.



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<http://trainingschool.infrastar.eu/>



Innovation and **N**etworking for **F**atigue and **R**eliability **A**nalysis of **S**tructures –
Training for **A**ssessment of **R**isk

The Infrastar Training School aims 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

14 – 17 April 2020 at Centrale Nantes in 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 School 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.



Infrastar Training School originates from Infrastar project that has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 676139.

Monitoring and auscultation

Dr Odile Abraham ([Université Gustave Eiffel](#), ex-[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 ([Université Gustave Eiffel](#), ex-[Ifsttar](#))

Reliability, risk and decision analyses

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

Organising committee

- Dr Odile Abraham and Dr Hakim Ferria ([Université Gustave Eiffel](#), ex-[Ifsttar](#))
- Prof. Ahmed Loukili ([SPI](#) – Engineering sciences graduate school)

The Infrastar Training School is coordinated by



The French institute of science and technology for transport, development and networks

With the support of



Co-sponsored by [IABSE](#)

Endorsed by [COFREND](#) and [AFGC](#)



Keynote lecture

- Model development and their updating for damage and/or ageing (provisional title)
Prof. Jochen Köhler (NTNU)

1. Monitoring and auscultation

- From sensors to useful signals for concrete evaluation and monitoring
Dr Odile Abraham (Université Gustave Eiffel, ex-Ifsttar)
- From signals to useful parameters: combination and data fusion
Probability of Detection (PoD), Receiver Operating Characteristic (ROC)
Dr Ernst Niederleithinger (BAM)
- Demonstrations and exercises on advanced NDE (fibre optics and Coda Wave Interferometry).
Dr Odile Abraham & Dr Xavier Chapeleau (Université Gustave Eiffel, ex-Ifsttar) and Dr Ernst Niederleithinger (BAM)

2. Structural and action models

- Load model calibration and safety factors derivation (provisional title)
Prof. Jochen Köhler (NTNU)
- Assessment of extreme values of effects in structures (lectures & exercises)
Dr Franziska Schmidt (Université Gustave Eiffel, ex-Ifsttar)
- Deterministic and probabilistic approach to fatigue (lectures & exercises)
Bernard Jacob (Université Gustave Eiffel, ex-Ifsttar)

3. Reliability, risk and decision analyses

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

Technical visits

- [LHEEA](#) - Research Laboratory in Hydrodynamics, Energetics and Atmospheric Environment
- [GeM](#) - Research institute of civil and mechanical engineering

