CIVIL AND ENVIRONMENTAL ENGINEERING

CRT/DISEG - Multirisk Analysis of Civil Infrastructures

Funded By	FONDAZIONE CRT CASSA DI RISPARMIO DI TORINO [P.iva/CF:06655250014] Dipartimento DISEG
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Context of the research activity	the candidate should analyse the types of hazards, both natural and man-made, on infrastructures, with particular reference to large-span bridges, to understand how these potential threads may affect the structural safety and functionality of the artwork.
Objectives	The research activity is related to the analysis of complex infrastructure systems, such as long-span bridges, in the presence of critical components and a wide set of hazards. This analysis is carried out through the application of advanced risk analysis techniques, mainly developed in industry and brought into civil engineering disciplines. The candidate will develop multidisciplinary skills, which allow integrated risk analyses, which take into account natural risks, including risks related to the ground effects of climate change, anthropogenic risks, including voluntary actions, and the effects of ageing, assess their potential NAT-NAT and NAT-TEC domino effects.
Skills and competencies for the development of the activity	Strong knowledge of Structural Mechanics and Structural Engineering is required, particularly in Bridge Engineering, Dynamics of Structures, Risk Analysis, Structural Robustness, and Structural Health Monitoring. Concerning the last field, specific prior knowledge of Data Analysis, Machine Learning, and Physics-Informed Machine Learning will be positively evaluated.