

Postdoc in Resilience modelling



Postdoc at Politecnico di Milano

Politecnico di Milano, home of over 45,000 students from around the world, is the first-ranked Italian technical university and among the first 20 Europe's leading technical and engineering universities. The Structural Performance Modelling, Management and Monitoring (SPM³) research group carries out research activity at the boundary between Structural Health Monitoring, Bridge Integrity Management and resilience assessment.

In collaboration with several Italian universities, [SPM³](#) is undertaking the research program 'RETURN: multi-Risk sciEnce for resilientT commUnities undeR a changiNg climate'

We announce a Postdoc position in the context of this project.

Job description

The postdoctoral fellow is expected to perform theoretical research activity on Resilience modelling. For this specific position, the research program is focused on the investigation of Resilience models and indicators. Important sub-topics are probabilistic modelling and risk analysis. The project will be carried out in connection with the Italian national project RETURN. The hired researcher will be supervised by Prof. Maria Pina Limongelli, head of the SPM³ research group.

Duties of the position

- Prepare a state-of-the-art on Resilience models, indicators and metrics.
- Adapt existing models for evaluation of resilience of transport infrastructures.
- Develop algorithms to implement an indicator-based resilience assessment tool.
- Validate the developed algorithms on an exemplary transport network.
- Communicate scientific findings through conference presentations, scientific publications, and public outreach activities.

Selection criteria

These criteria **must be fulfilled** for your application to be considered:

- PhD or equivalent University level diploma in civil/mechanical engineering or a related field with a final average grade of B or higher. The degree must have been obtained within the last three years prior to the application deadline.
- Proficiency in spoken and written English.

The following criteria will also be used to **shortlist candidates** for an interview:

- Programming skills in, for example, MATLAB or Python.
- Solid background in mathematics and structural mechanics.
- Experience in probabilistic modelling, Bayesian Networks and risk analysis.
- Capability to effectively present at conferences.

The following **personal characteristics** are particularly valued for this position:

- Independence.
- Problem solving and organizational capacity.
- Enthusiasm and perseverance.
- Ability to work in a group.

We offer

- Exciting and stimulating tasks in an excellent international academic environment.
- Participation to National and EU research projects.
- An open and inclusive work environment with dedicated colleagues.

Salary and conditions

The salary is 25.000€/year before tax. The period of employment is 1 year, renewable.

You are expected to live close enough to be at PoliMI (Leonardo Campus) on a daily basis if required and to attend meetings at PoliMI within short notice.

A position as a postdoctoral fellow is time-limited and intended as a first career step after a PhD degree.

Application and selection

The application will be considered based solely on the information submitted by the application deadline.

We look forward to receiving your application dossier including the following documents:

- Your CV including final grades and relevant professional experience and knowledge.
- Copies of your educational certificates with an English or Italian translation
- Recommendation letters written in English or Italian from 2 referees

The selection is carried out based on the application dossier and an interview by a committee nominated by the Department Board.