



Università degli Studi di Napoli Federico II
Dipartimento di Strutture per l'Ingegneria e
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Ministry of Foreign Affairs
and International Cooperation

POSITION: Post-Master Research fellowship (*Assegno di Ricerca*) @ Department of Structures for Engineering and Architecture of University of Naples Federico II.

DURATION: 12 months.

SCIENTIFIC CLASS OF THE POSITION: STRUCTURAL ENGINEERING (SSD ICAR/09 Tecnica delle Costruzioni).

PROJECT: EXPLORA: EXPosure assessment for buiLding typOlogies integRating innovAtive survey techniques, funded by Ministero affari esteri e della cooperazione internazionale as part of bilateral agreements between Italy and Montenegro

TITLE OF THE POSITION: Exposure assessment for building typologies integrating innovative survey techniques

PRINCIPAL INVESTIGATOR: prof. Maria Polese

PROJECT GOALS: EXPLORA project will contribute to the development of a suitable exposure model for ordinary buildings in Montenegro and to the updated seismic risk assessment for the country. An innovative integrated multi-level survey approach will be implemented and applied in pilot municipalities, allowing to assemble building inventory according to relevant up-to-date vulnerability models. Image-based processing techniques, will be employed to rapidly gather spatial type building features, such as building shape and height, over large regions. Other needed building characteristics, e.g. building age and construction material, will be integrated combining census data with an interview-based survey for building typologies and applied to town compartments. Employing the integrated multi-level survey of pilot municipalities as a “training set”, Machine Learning based techniques will be adopted to expand the inventory at the national level. The updated exposure model could be usefully combined with recent vulnerability and hazard models (e.g. ESHM20 for hazard) towards a next generation NRA for Montenegro, including assessment of higher risk areas to plan retrofitting mitigation campaigns.

FELLOWSHIP GOALS: Development of an innovative methodology for the exposure assessment of ordinary buildings to be applied for large-scale risk analysis. The methodology will be based on multi-level surveys, which integrate traditional data acquisition systems such as survey for building typologies with techniques based on digital image processing and geo-statistical analysis approaches (e.g. machine learning in combination with GIS).

CALL: Download here:

www.dist.unina.it/documents/15084734/51386070/Call+for+grant+6/2fd3c0a9-822f-459c-b95a-44292793b4f7

ASSESSMENT PROCEDURE: Presentation of application request (pages 11 and 12 of the call), curriculum vitae, titles and publications before February 19th, 2024, 12:00 a.m. (CET) via mail dist@unina.it, according to the procedure indicated by the call. Oral assessment of candidates provided with adequate curricula on February 23rd, 2024, 10:00 a.m. (CET), on MS Teams.

FELLOWSHIP GRANT: annual fellowship equal to roughly 22000 euros.

WORKING CONDITION: Physical presence in Naples is requested for contract signing and during the research activities (i.e., for 12 months starting from –presumably – March 2024).

FURTHER INFORMATION: Please contact mapolese@unina.it