

**Call for application for research scholarships
for post-graduate international candidates**

RESEARCH PROJECT N. 34

Title
Pedestrian evacuation simulation under the scenario with earthquake-induced debris
Scientific responsible (name, surname, role)
Gian Paolo Cimellaro, Supervisor, Associate Professor (gianpaolo.cimellaro@polito.it)
Short description of the research activity (max 250 words)
Earthquake-induced collapse of buildings has been effectively controlled in recent years. However, failure of non-structural components and the subsequent falling debris are still serious, which brings a new threat to outdoor evacuation. The project will focus on performing in-depth research on pedestrian evacuation simulation considering falling debris. LS-DYNA will be adopted to study the features of falling non-structural components. The debris distribution model will be proposed using regression analysis. Besides, experiments are planned to be conducted to quantify the influence of debris on pedestrian movement. Finally, based on the simulation method, some dense urban areas will be selected as case studies to conduct regional evacuation simulation, and to figure out the influence of falling debris on pedestrian evacuation and identify the areas which are at high risk of falling objects.
Specific requirements (experiences, skills)
Preferably: good at finite element analysis, skilled in FEA softwares including LS-DYNA, MSC.Marc, etc. Preferably: familiar with Chinese language
Website of the research group (if any)
http://staff.polito.it/gianpaolo.cimellaro/index.html http://www.luxinzheng.net/english.htm
Keywords (min 3, max 6)
Earthquake; Failure of non-structural components; Debris distribution; Pedestrian evacuation, seismic risk, resilience.
Research Area (max 1)
Structural, Geotechnical and Building Engineering