



UNIVERSITÀ  
degli STUDI  
di CATANIA



*Dipartimento DICAR*

*Aula Oliveri, Cittadella Universitaria*

*UNIVERSITÀ DI CATANIA*



## PhD Course

# EVALUATION AND MITIGATION OF URBAN AND LAND RISKS

**WORKSHOP ON:  
URBAN RISK DUE TO TUNNELS:  
GEOTECHNICAL AND STRUCTURAL ASPECTS**

**January, 7-10, 2020**



## Workshop on:

# "URBAN RISK DUE TO TUNNELS: GEOTECHNICAL AND STRUCTURAL ASPECTS"

07.01.2020

### 09:00-10:00 OPENING CEREMONY

**Prof. E. Foti** (*Head of the Department of Civil Engineering and Architecture, University of Catania*)

**Prof. M. Cuomo** (*Coordinator of the PhD course in Evaluation and Mitigation of Urban and land Risk, University of Catania*)

**Eng. S. Fiore** (*General Manager of Ferrovia Circumetnea*)

**Eng. A. Pulejo** (*Project Manager of CMC Ravenna*)

**Eng. G. Platania** (*President of the Catania Associations of Engineers*)

**Eng. M. Scaccianoce** (*President of the Foundation of the Catania Association of Engineers*)

**Eng. G. Piana** (*President of ANCE Catania*)

**Prof. M.R. Massimino** (*Associate Professor of Geotechnical Engineering, University of Catania*)

### 10:00-10:45 LESSON 1: The "super-wedge" cutting method applied during the construction of the Catania underground

(*Eng. S. Fiore, General manager of Ferrovia Circumetnea*)

### 10:45-11:30 LESSON 2: The experience of CMC in the extending works of Catania metro network

(*Eng. A. Pulejo, Project Manager of CMC Ravenna*)

### 11:30-12:15 LESSON 3: Damage occurred on underground and aboveground structures: a fundamental lesson for a careful geotechnical and structural design

(*Prof. M.R. Massimino, Associate Professor of Geotechnical Engineering, University of Catania*)

### 14:00-18:00 Technical visit to the underground construction sites of the new Metro Line that underpass the urban area of Catania

08.01.2020

### 09:00-11:00 LESSON 4: Geological and geotechnical investigations: a key aspect in infrastructure design

(*Prof. F. Castelli, Full Professor in Geotechnical Engineering, Kore University, Enna*)

### 11:00-13:00 LESSON 5: Static and dynamic in-situ tests: the new challenges and opportunities

(*Dr. A. Ferraro, Assistant Researcher, University of Catania*)

### 14:00-16:00 LESSON 6: Evaluation of dynamic soil parameters and soil non-linearity by means of laboratory tests

(*Dr. V. Lentini, Member of the Geotechnical Research Group, Kore University, Enna*)

09.01.2020

### 09:00-11:00 LESSON 7: Numerical modelling and structural aspects of tunnel-soil systems

(*Prof. M. Cuomo, Full Professor in Structural Engineering, University of Catania*)

### 11:00-13:00 LESSON 8: Static behaviour of full-coupled tunnel-soil-aboveground structures: from case-histories to numerical approaches

**Part 1** (*Prof. E. Bilotta, Associate Professor in Geotechnical Engineering, University of Naples Federico II*)

### 15:00-17:00 LESSON 8: Static behaviour of full-coupled tunnel-soil-aboveground structures: from case-histories to numerical approaches

**Part 2** (*Prof. E. Bilotta, Associate Professor in Geotechnical Engineering, University of Naples Federico II*)

10.01.2020

### 09:00-13:00 LESSON 9: Analysis of dynamic behaviour of tunnel-soil systems by means of centrifuge tests

(*Prof. G. S. P. Madabhushi, Full Professor in Geotechnical Engineering, University of Cambridge*)

### 14:00-17:00 LESSON 10: FEM modelling of full-coupled tunnel-soil-aboveground structures under seismic conditions

(*Dr. G. Abate, Member of the Geotechnical Research Group, University of Catania*)