An introduction to constitutive modelling of Geomaterials – Claudio di Prisco

Date: July 18-21 2017

**July the17th 8 hours**

9:00-10:00 Introduction

10:00-13:00H From Micro to Macro: solid phase (Calvetti)

14:00 – 18:00 From Micro to Macro: granular flows (Berzi)

**July the 18th 4 hours**

9:00 – 11:00 Introduction to the mechanical behavior of granular soils under quasi-static loading. The role of fabric. Main features of monotonic mechanical behavior of granular soils under both dry and saturated conditions. (di Prisco)

11:00 – 13:00 Elastoplastic strain-hardening constitutive models – The Cam-clay models – The Nova-Wood models – The critical state theory. -Been and Jeffries approach: the state parameter – Anisotropic models -– Elasto-platic constitutive models for bonded materials. Viscoplasticity

**July the 19st 6 hours**

9:00 – 11:00 Localization and liquefaction criteria - The simple shear conditions: applications to partially saturated materials. The case of compaction bands

11:00 – 13:00 Elastic-plastic coupling. - Viscoplasticity–. Stability criteria for both incremental and visco-plastic constitutive models: the theory of controllability and the Hill sufficient condition for stability -

13:00 – 15:00 Stability criteria for both incremental and visco-plastic constitutive models: the theory of controllability and the Hill sufficient condition for stability -

**July the 20th 7 hours**

8:30 – 1030 Yield criteria for geomaterials (G. Mortara)

10:30-11:30 Single and multi-mechanism plasticity models (G. Mortara)

12:00 – 13:00 Partially saturated soils (Della Vecchia)

14:00 – 17:00 Partially saturated soils (Della Vecchia)