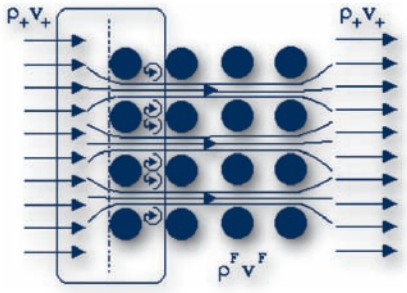
The participation to the short course is free of charge but limited to 50 participants. For registration please send an email to **info@eucentre.it**.

The workshop has been organised with the contribution of: Fondazione Cariplo and Regione Toscana Seismic Risk Section.

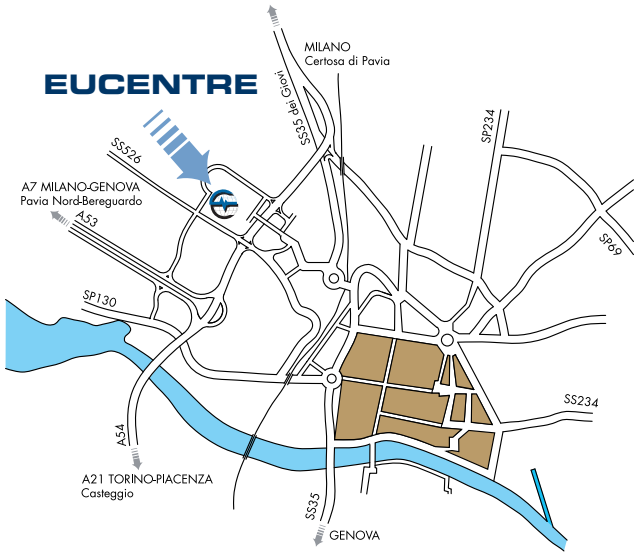
The support of Fondazione Cariplo through the project number 2009.2822 is gratefully acknowledged.



B. Albes 2005

Reaching us

Eucentre main buildings are sited within the University of Pavia, Polo Cravino area. Further information can be found at www.eucentre.it



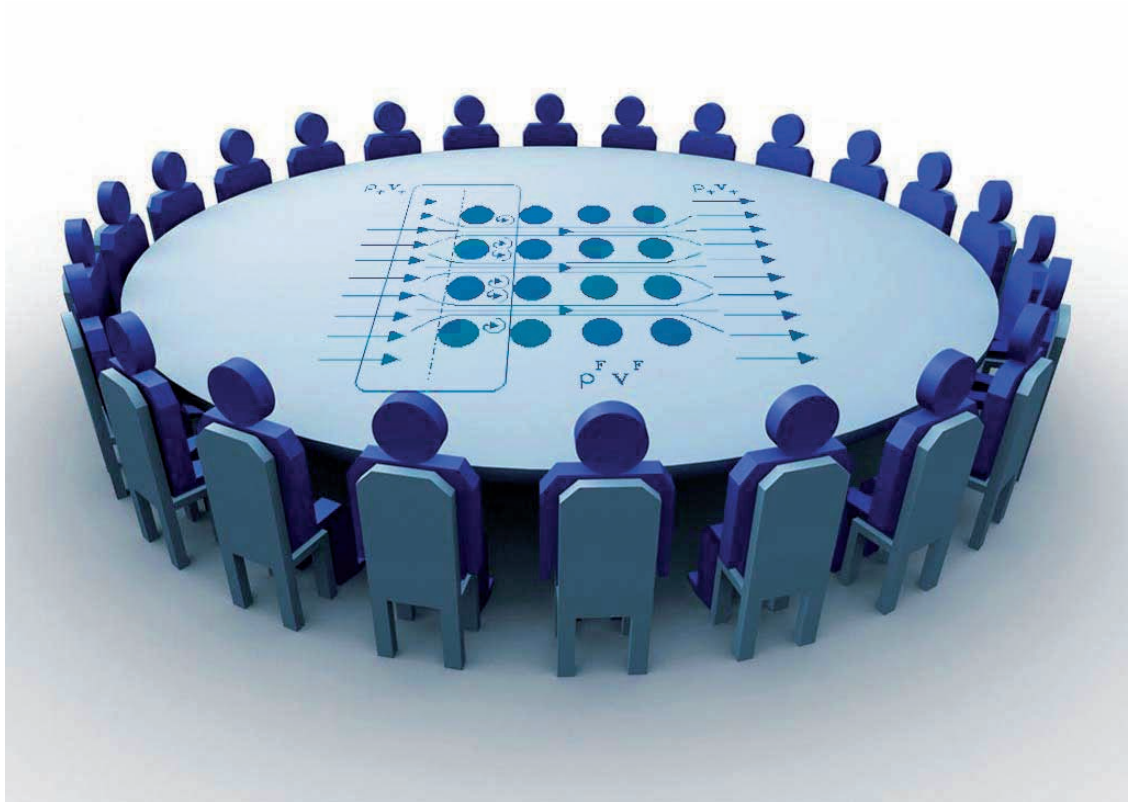
University of Pavia

I.U.S.S. Istituto Universitario di Studi Superiori di Pavia

EUCENTRE European Centre for Training and Research in Earthquake Engineering

MECHANICS OF POROUS MEDIA: FROM THERMODYNAMICS TO APPLICATIONS

A SHORT INTRODUCTORY COURSE
UNIVERSITY OF PAVIA, FEBRUARY 10, 2011



PROGRAM

9.00 – 9.10 Course presentation
Ferdinando Auricchio

1 – Motivations

9.10 – 9.30 Relevance of the mechanics of porous media in engineering and geosciences: from geophysical exploration to earthquake engineering
Krzysztof Wilmanski

9.30 – 9.50 Relevance of the mechanics of porous media in civil, environmental, material and medical engineering: from dams to living tissues
Carlo Callari

2 – Thermodynamics and constitutive modeling

9.50 – 11.10 Thermodynamics of multi-components continua
Krzysztof Wilmanski

11.10 – 11.30 *Coffee break*

11.30 – 12.50 Modeling porous media in the Biot's thermodynamic framework
Carlo Callari

12.50 – 13.40 *Lunch break*

3 – Analytical solutions and numerical formulations of BIVPs

13.40 – 14.30 A few remarks on micro-macro transitions and Gassmann relations for poroelastic materials
Krzysztof Wilmanski

14.30 – 15.20 Finite element formulations for porous media
Carlo Callari

15.20 – 15.40 *Coffee break*

4 – Research applications

15.40 – 16.30 On the stability of the inversion of measured seismic wave velocities to estimate porosity in fluid-saturated media
Carlo Lai

16.30 – 17.20 Estimation of parameters in linear porous models - magnetic resonance methods in geotechnics
Krzysztof Wilmanski

17.20 – 18.10 Applications in civil engineering: dams and tunnels. Simulation of strain localization in porous media
Carlo Callari

Lecturers:

Krzysztof Wilmanski
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