

# The Fourth Biot Conference on Poromechanics

Columbia University, New York

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Prof. Maurice Anthony Biot, a world renowned engineer, physicist, and applied mathematician, was a professor of mechanics at Columbia University in the period 1937-1945

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## Plenary Lectures

Prof. Zdenek P. Bazant (Northwestern University)

Modeling of Creep and Hygrothermal Deformations of Concrete: Intriguing Consequences of Nano-Porosity

Prof. James R. Rice (Harvard University)

Some Fluid-Solid Interactions in Earthquake and Glacier Dynamics

Prof. Fumio Tatsuoka (Tokyo University of Science, Japan)

Rate Effects on Elastic and Inelastic Stress-Strain Behaviours of Geomaterials Observed in Experiments

## Keynote Lectures

Prof. Zhigang Suo (Harvard University): Large Deformation and Instability in Swelling Polymeric Gels

Prof. Franz-Josef Ulm (MIT): The Nanogranular Nature of Hydrated Porous Materials: Concrete, Shale and Bone

Prof. Jerry M. Harris (Stanford University): Differential Acoustic Resonance Spectroscopy

Prof. Shaul Sorek (Ben-Gurion University of the Negev, Israel): Shock Wave Through Deformable Saturated Porous Media

Prof. Ronaldo I. Borja (Stanford University): A Framework for Coupled Solid-Deformation/Fluid-Diffusion Analysis of Variably Saturated Slopes

Prof. Stephen C. Cowin (City College of the City University of New York): Poroelastic Models of Bone Tissue

## Technical Sessions

Poroelastic Mechanics of Bone Tissue and Measurements (Prof. Stephen C. Cowin)

Numerical Investigation of Coupled Problems in Continuum Biomechanics (Prof. Jacques M. Huyghe)

Poromechanical Modeling of CO<sub>2</sub> Sequestration (Prof. Giuseppe Gambolati)

Multiphase Fluid Flow in Deformable Porous Media (Prof. Marte Gutierrez)

Unsaturated Geomaterials (Prof. Ning Lu)

Micro-Mechanics of Granular Porous Media (Prof. Mourad Zeghal)

Multi-Scale and Stochastic Modeling of Porous Media (Prof. X. Frank Xu)

Multi-Scale Characterization of Pavement Materials (Prof. Huiming Yin)

Thermodynamics and Information Theory (Dr. Shu-Kun Lin)

Nonlinear Effects, Shock Waves, and Fractures in Acoustics of Porous and Permeable Media (Dr. James G. Berryman)

Biot Equation in Seismic Wave Propagation (Dr. Pratap Sahay)

Nano-Indentation Material Characterization in Poromechanics (Prof. Christopher Bobko)

Analytical and Computational Solutions to Problems in Poromechanics (Prof. Kanthasamy Muraleetharan, Prof. Younane N. Abousleiman, Dr. Russell T. Ewy)

## The Second Frank L. DiMaggio Symposium

\* Constitutive Models (Prof. Victor Kaliakin, Dr. Ashraf Al-Tahini)

\* Strain Localization in Saturated and Partially Saturated Porous Media under Dynamic Loading (Prof. Majid T. Manzari)

**New York City.** In addition to the historic links between Biot and Columbia University, New York City has many well known attractions that are especially appealing for international participants. It is easily accessible from all over the world through three international airports: JFK, Newark Liberty and LaGuardia. Its public transportation system, including the subways and buses, is well developed. Columbia University is easily accessible from mid-town by subway in about 15 minutes. More details about accommodations are provided at the Conference website.