

1. Record Nr.	UNINA9910830453403321
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Titolo	Advances in computed tomography for geomaterials [[electronic resource]] : GeoX 2010 // edited by Khalid A. Alshibli, Allen H. Reed ; associate editors, Les Butler ... [et al.]
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, , 2010
ISBN	1-118-55772-7 1-118-58761-8 1-118-58781-2
Edizione	[1st edition]
Descrizione fisica	1 online resource (443 p.)
Collana	ISTE
Altri autori (Persone)	AlshibliKhalid ReedAllen H
Disciplina	624.151 625.122
Soggetti	Soil mechanics - Research Rock mechanics - Research Tomography Three-dimensional imaging in geology Materials - Testing Concrete - Analysis Radiography - Industrial
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Papers presented March 1-3, 2010 in New Orleans, La. sponsored by Louisiana Sate University and the Naval Research Laboratory, Stennis Space Center, Mississippi.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Advances in Computed Tomography for Geomaterials; Title Page; Copyright Page; Table of Contents; Foreword; Keynote Paper: Sand Deformation at the Grain Scale Quantified Through X-ray Imaging; Quantitative Description of Grain Contacts in a Locked Sand; 3D Characterization of Particle Interaction Using Synchrotron Microtomography; Characterization of the Evolving Grain-Scale Structure in a Sand Deforming under Triaxial Compression; Visualization of Strain Localization and Microstructures in Soils during Deformation Using Microfocus X-ray CT

Determination of 3D Displacement Fields between X-ray Computed Tomography Images Using 3D Cross-Correlation; Characterization of Shear and Compaction Bands in Sandstone Using X-ray Tomography and 3D Digital Image Correlation; Deformation Characteristics of Tire Chips-Sand Mixture in Triaxial Compression Test by Using X-ray CT Scanning; Strain Field Measurements in Sand under Triaxial Compression Using X-ray CT Data and Digital Image Correlation; Latest Developments in 3D Analysis of Geomaterials by Morpho+; Quantifying Particle Shape in 3D; 3D Aggregate Evaluation Using Laser and X-ray Scanning

Computation of Aggregate Contact Points, Orientation and Segregation in Asphalt Specimens Using their X-ray CT Images; Integration of 3D Imaging and Discrete Element Modeling for Concrete Fracture Problems; Application of Microfocus X-ray CT to Investigate the Frost-induced Damage Process in Cement-based Materials; Evaluation of the Efficiency of Self-healing in Concrete by Means of -CT; Quantification of Material Constitution in Concrete by X-ray CT Method; Sealing Behavior of Fracture in Cementitious Material with Micro-Focus X-ray CT

Extraction of Effective Cement Paste Diffusivities from X-ray Microtomography Scans; Contributions of X-ray CT to the Characterization of Natural Building Stones and their Disintegration; Characterization of Porous Media in Agent Transport Simulation; Two Less-Used Applications of Petrophysical CT-Scanning; Trends in CT-Scanning of Reservoir Rocks; 3D Microanalysis of Geological Samples with High-Resolution Computed Tomography; Combination of Laboratory Micro-CT and Micro-XRF on Geological Objects; Quantification of Physical Properties of the Transitional Phenomena in Rock from X-ray CT Image Data; Deformation in Fractured Argillaceous Rock under Seepage Flow Using X-ray CT and Digital Image Correlation; Experimental Investigation of Rate Effects on Two-Phase Flow through Fractured Rocks Using X-ray Computed Tomography; Keynote Paper: Micro-Petrophysical Experiments Via Tomography and Simulation; Segmentation of Low-contrast Three-phase X-ray Computed Tomography Images of Porous Media; X-ray Imaging of Fluid Flow in Capillary Imbibition Experiments; Evaluating the Influence of Wall-Roughness on Fracture Transmissivity with CT Scanning and Flow Simulations

Sommario/riassunto

This title discusses a broad range of issues related to the use of computed tomography in geomaterials and geomechanics. The contributions cover a wide range of topics, including deformation and strain localization in soils, rocks and sediments; fracture and damage assessment in rocks, asphalt and concrete; transport in porous media; oil and gas exploration and production; neutron tomography and other novel experimental and analytical techniques; image-based computational modeling; and software and visualization tools. As such, this will be valuable reading for anyone interested in the appli
