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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-CorrelationCharacterization 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 ImagesIntegration 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 ScansContributions 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 theTransitional Phenomena in Rock from X-ray CT Image DataDeformation 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