1. Record Nr. UNISA996201061503316 Autore Coussy Olivier Titolo Poromechanics [[electronic resource] /] / Olivier Coussy Chichester, England;; Hoboken, NJ,: Wiley, c2004 Pubbl/distr/stampa **ISBN** 1-280-26936-7 9786610269365 0-470-09270-X 0-470-09271-8 Edizione [2nd ed.] Descrizione fisica 1 online resource (314 p.) Altri autori (Persone) CoussyOlivier Disciplina 620.1/1692 620.11692 Soggetti Porous materials - Mechanical properties Porous materials - Mechanical properties - Mathematical models Continuum mechanics Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Previous ed. published as: Mechanics of porous continua. 1995. Note generali Nota di bibliografia Includes bibliographical references (p. [285]-292) and index. Nota di contenuto Poromechanics: Contents: Preface: Acknowledgements: 1 Deformation and Kinematics. Mass Balance; 1.1 The Porous Medium and the Continuum Approach; 1.1.1 Connected and Occluded Porosity. The Matrix; 1.1.2 Skeleton and Fluid Particles. Continuity Hypothesis; 1.2 The Skeleton Deformation; 1.2.1 Deformation Gradient and Transport Formulae; 1.2.2 Eulerian and Lagrangian Porosities. Void Ratio; 1.2.3 Strain Tensor; 1.2.4 Infinitesimal Transformation and the Linearized Strain Tensor; 1.3 Kinematics; 1.3.1 Particle Derivative; 1.3.2 Strain Rates; 1.4 Mass Balance; 1.4.1 Equation of Continuity 1.4.2 The Relative Flow Vector of a Fluid Mass. Filtration Vector. Fluid Mass Content 1.5 Advanced Analysis; 1.5.1 Particle Derivative with a Surface of Discontinuity; 1.5.2 Mass Balance with a Surface of Discontinuity. The Rankine-Hugoniot Jump Condition; 1.5.3 Mass Balance and the Double Porosity Network; 2 Momentum Balance. Stress Tensor: 2.1 Momentum Balance: 2.1.1 The Hypothesis of Local Forces:

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Sommario/riassunto

Modelling and predicting how porous media deform when subjected to external actions and physical phenomena, including the effect of saturating fluids, are of importance to the understanding of geophysics and civil engineering (including soil and rock mechanics and petroleum engineering), as well as in newer areas such as biomechanics and agricultural engineering. Starting from the highly successful First Edition, Coussy has completely re-written Mechanics of Porous Continua/Poromechanics to include:New material for:Partially saturated porous media Reactive porous me