Permeability and capillarity

844059
Boundary integral equation method for porous media flow
Liggett, J A; Liu, P L F
London: George Allen and Unwin, 1983, 255P

844060
Fluid flow through a crack network in rocks
Englman, R; Gur, Y; Jaeger, Z
J Appl Mech (Trans ASME, Ser E) V50, N4a, Dec 1983, P707-711

A network of cracks pervading a rock is modelled by a random distribution of two-dimensional intersecting, complex, narrow cracks. The percolation properties of the network of cracks are studied as a function of the crack-area density and the size of the medium. The model has derived a critical crack density beyond which flow is possible.

844061
Probabilistic and geostatistical approach to the notion of rock fissural porosity (In French)
Thomas, A; Pineau, A; Richard, P
Rev Fr Geotech N24, Aug 1983, P39-49

Considers a vectorial definition of rock porosity in which some elements are suitable for the characterization of rock fissural porosity. The distribution of fractures in the region of measurement is introduced to study the structural features of this porosity as regionalized variables. Variance analysis is shown to be necessary for the correct determination of the distance of measurement and the frequency of sampling. A threshold of probability or of variance may be used to define fissural porosity.

844062
Microcrack permeability in tight gas sandstone
Ostensen, R W
Soc Pet Engr J V23, N6, Dec 1983, P919-927

A theory of permeability based on flow through cracks is developed. The compliance of the cracks is controlled by elastic deformation of a Gaussian distribution of hemispherical surface asperities, indented into the opposing crack face. The predictions of the theory are compared with data on tight sands and excellent agreement is obtained. Other available tight sand data are used to support further the contention that the permeability of tight sand cores results from flow through microcracks.

844063
Low-permeability laboratory measurements by nonsteady-state and conventional methods
Freeman, D L; Bush, D C
Soc Pet Engr J V23, N6, Dec 1983, P928-936

Describes a rapid method for determining the permeability of tight gas reservoirs in the range of 0.0001 to 0.35md for plug-size core samples.

Compressibility, swelling and consolidation

844064
Secondary consolidation effects in the application of the velocity method. Technical note
Parkin, A K; Lun, P T W
Geotechnique V34, N1, March 1984, P126-128

844065
On the theory of consolidation with double porosity. - 3. A finite element formulation
Khaled, M Y; Beskos, D E; Aifantis, E C
Int J Num Anal Meth Geomech V8, N2, March-April 1984, P101-123

The basic equations of the theory of consolidation with double porosity are rederived using an alternative approach to that used in parts 1 and 2, the companion papers. In this case Biot's theory of consolidation with single porosity is extended to double porosity. The finite element method is then used to solve the equations. Three numerical examples are used to illustrate the method and assess the differences between single and double porosity models. 42 refs.

844066
Laboratory investigations of frost heaving
Abzhalimov, R S
Soil Mech Found Engng V19, N5, Sept-Oct 1982, P205-207

Laboratory investigations were carried out to determine the coefficient of frost heaving of soils as a function of pressure.

Dynamic properties

844067
Love type waves in a porous layer with irregular interface
Chattopadhyay, A; De, R K
Int J Engng Sci V21, N11, 1983, P1295-1303

The dispersion equation is derived related to the frequency and the phase velocity of propagation of Love waves in a non-dissipative liquid fluid filled porous solid underlain by an isotropic and homogeneous half space. The common boundary of the porous layer and the underlying half space is considered as slightly curved in the form of a rectangle.

844068
Elastic waves generated by loading applied to surface of spherical cavity
Moodie, T B; Mioduchowski, A; Haddow, J B; Tait, R J
Int J Engng Sci V21, N11, 1983, P1369-1378

Presents a new approach to the solution of the elastodynamic problem of the sudden application of a spatially nonuniform axially symmetric distribution of tractions to the surface of a cylindrical cavity in an unbounded medium. The approach uses the method of characteristics for one spatial variable and time. The technique is for use in the study of earthquake phenomena.

844069
Crack transient torsional wave interaction in an elastic bi-material
George, O D
Int J Engng Sci V21, N11, 1983, P1379-1395

An infinitely long cylindrical elastic solid of finite radius is embedded in another infinite elastic cylindrical solid to form an elastic bimaterial. The early-time response of the composite to a sudden twist applied axisymmetrically over a stationary penny-shaped crack which appears over a cross-section of the fibre, terminating orthogonally at the bimaterial interface, is investigated. The method is applicable to the response of a rock formation which is like a composite material and which contains a fault.

844070
Stress ratio effects on shear modulus of dry sands
Yu, P; Richart, F E
J Geotech Engng Div ASCE V110, NGT3, March 1984, P331-345