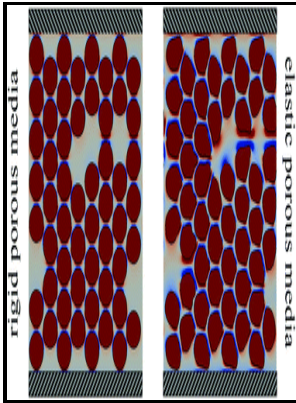


# Boundary integral equation method for porous media flow

**Allen & Unwin - Numerical Solution of a Stationary Filtration Problem of Viscous Fluid in a Piecewise Homogeneous Porous Medium by Applying the Boundary Integral Equation Method**



Description: -

-  
Hanukkah -- Psychological aspects.  
Christmas -- Psychological aspects.  
Depression, Mental.  
Boundary value problems.  
Integral equations.  
Groundwater flow -- Mathematics. boundary integral equation method  
for porous media flow  
-boundary integral equation method for porous media flow  
Notes: Bibliography, p248-251. - Includes index.  
This edition was published in 1983



Filesize: 54.99 MB

Tags: #CiteSeerX #— #porous #media #by #singular #integral #equations #method

**Boundary integral equation method for linear porous-elasticity with applications to fracture propagation, International Journal for Numerical Methods in Engineering**

Oxford Centre for Collaborative Applied Mathematics, 96, 55-70. The wavelet decomposition of the function can then be written as 21 where  $C$  and  $A$  are matrices given by 22 Likewise, a two variable function defined on the square which is square integrable can as well be expanded using the Chebyshev wavelets basis as: 23 where  $A$  is a matrix.

## GENERAL INTEGRAL EQUATIONS OF STOKES FLOW THROUGH THE RANDOM STRUCTURE POROUS MEDIA

In order to determine the appropriate conditions of operations as well as the machinery to use for the various operations and jobs, a number of parameters and the governing equations have to be predicted accurately.

**The Boundary Integral Equation Method for Porous Media Flow, Eos Transactions**

Practical applications of the model are expected in the failure of overconsolidated clay, earthquake prediction and underground hydraulic fracturing for energy exploration. Nonlinear PDEs arise naturally in mathematical modelling of nonlinear physical processes, e.

**Numerical Solution of a Stationary Filtration Problem of Viscous Fluid in a Piecewise Homogeneous Porous Medium by Applying the Boundary Integral Equation Method**

Both the root mean square and the maximum absolute error analysis used in the study were within significantly close range. It is shown that this method can be applied efficiently to the study of the steady state flow in cracked materials with anisotropic matrix permeability and a dense distribution of curved-line intersecting cracks. The perturbation series obtained by the BEM gives the complete solution for the original governing equation.

## **Weakly**

Root Mean Square Error Estimate and Maximum Absolute Error values for pressure distribution through the reservoir were calculated at each time within the simulation period.

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The simulation results based on the Chebyshev wavelet method, compared to the exact solution have fairly small errors measured which makes the Chebyshev wavelet method very efficient and accurate in approximating the pressure distribution in the reservoir from the flow model.

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