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Volume 50, Issue 10, Pages 1507-1858 (15 May 2013)

Ductile failure under combined shear and tension

Original Research Article

Pages 1507-1522

S.S. Haltom, S. Kyriakides, K. Ravi-Chandar

Three-dimensional recovery of stress intensity factors and energy release rates from surface full-field displacements

Original Research Article

Pages 1523-1537

Stéphane Andrieux, Thouraya Nouri Baranger

Highlights

► Energy method to solve 3D Cauchy problem for Lamé operator. ► Boundary conditions identification from incomplete Cauchy data. ► Stress Intensity Factors identified in a three-dimensional framework. ► 3D stress intensity factors compared to those issued from plane stress and strain.

Analysis of the power input needed to propagate multiple hydraulic fractures

Original Research Article

Pages 1538-1549

A.P. Bunger

Parallel edge cracks due to a phase transformation

Original Research Article

Pages 1550-1561

Bharat Penmecha, Kaushik Bhattacharya

Highlights

► Parallel edge cracks due to solid–solid phase transformation propagate without instabilities. ► Cracks do not have an effect on overall phase boundary propagation. ► Cracks grow all the way to the interface. ► Established a condition on jump in stress field across interface when parallel cracks are expected.

Mode mixity and size effect in V-notched structures

Original Research Article

Pages 1562-1582

P. Cornetti, A. Sapora, A. Carpinteri

Experimental studies on the interaction among cracks, notches and

interfaces of bonded polymers

Original Research Article

Pages 1583-1596

Arun Krishnan, L. Roy Xu

Effect of couple-stresses on the Mode I dynamic stress intensity factors for two equal collinear cracks in an infinite elastic medium during passage of time-harmonic stress waves

Original Research Article

Pages 1597-1604

Shouetsu Itou

Highlights

► Dynamic stresses for two equal collinear cracks are solved using couple-stress theory. ► Time-harmonic stress waves impinge normal to the cracks in an infinite medium. ► Dual integral equations are solved using the Schmidt method.

A numerical model for the search of the optimum frequency in electromagnetic metal forming

Original Research Article

Pages 1605-1612

Ruben Otin

Steady-state propagation of interface corner crack

Original Research Article

Pages 1613-1620

Badrinath Veluri, Henrik Myhre Jensen

Ductility of 304 stainless steel under pulsed uniaxial loading

Original Research Article

Pages 1621-1633

Graham W. Cullen, Yannis P. Korkolis

Study and solution of BEM-singular integral equation method in the case of concentrated loads

Original Research Article

Pages 1634-1645

G.J. Tsamasphyros, E.E. Theotokoglou, S.P. Filopoulos

A study of stability and bifurcation in micro-cracked periodic elastic composites including self-contact

Original Research Article

Pages 1646-1663

Highlights

► Stability and uniqueness criteria for microcracked periodic composites are given. ► Crack unilateral self-contact is included leading to a non-self adjoint problem. ► Linear comparison problems give upper and lower bounds to instability and bifurcation. ► The theoretical results can be also adopted for generic non-periodic RVEs. ► Periodicity loss and size effect of the homogenized response appear in the results.

On superelastic bending of shape memory alloy beams

Original Research Article

Pages 1664-1680

Reza Mirzaeifar, Reginald DesRoches, Arash Yavari, Ken Gall

On principal shear axes for correction factors in Timoshenko beam theory

Original Research Article

Pages 1681-1688

S.B. Dong, S. Çarbaş, E. Taciroglu

Experimental and numerical dynamic analysis of a live tree stem impacted by a Charpy pendulum

Original Research Article

Pages 1689-1698

D. Bertrand, F. Bourrier, I. Olmedo, M. Brun, F. Berger, A. Limam

Microstructure-induced hotspots in the thermal and elastic responses of granular media

Original Research Article

Pages 1699-1709

François Willot, Luc Gillibert, Dominique Jeulin

The Proper Generalized Decomposition (PGD) as a numerical procedure to solve 3D cracked plates in linear elastic fracture mechanics

Original Research Article

Pages 1710-1720

Eugenio Giner, Brice Bognet, Juan J. Ródenas, Adrien Leygue, F. Javier Fuenmayor, Francisco Chinesta

Highlights

► A 3D crack problem is decomposed into 2D and 1D domains plus extra-coordinates. ► The Poisson's ratio and the plate thickness are considered as extra-coordinates. ► A single solution solves for a given range of Poisson's ratio and plate thickness. ► The problem is solved at roughly the cost of a series expansion of 2D analyses. ► Refined discretizations are affordable, capturing the corner singularity behavior.

Switch between fast and slow Biot compression waves induced by “second gradient microstructure” at material discontinuity surfaces in porous media

Original Research Article

Pages 1721-1746

Giuseppe Rosi, Angela Madeo, Jean-Louis Guyader

Electric and magnetic polarization saturation and breakdown models for penny shaped cracks in 3D magnetoelastic media

Original Research Article

Pages 1747-1754

MingHao Zhao, ZhengHua Guo, CuiYing Fan, Ernian Pan

Micromechanical modeling of coupled viscoelastic–viscoplastic composites based on an incrementally affine formulation

Original Research Article

Pages 1755-1769

B. Miled, I. Doghri, L. Brassart, L. Delannay

Postbuckling analysis of variable angle tow composite plates

Original Research Article

Pages 1770-1780

Zhangming Wu, Gangadharan Raju, Paul M. Weaver

Plastic deformation of 2024-T351 aluminum plate over a wide range of loading conditions

Original Research Article

Pages 1781-1790

J.D. Seidt, A. Gilat

Dynamic stiffness of hollowed cylindrical rubber vibration isolators — The wave-guide solution

Original Research Article

Pages 1791-1811

Martin Östberg, Michael Coja, Leif Kari

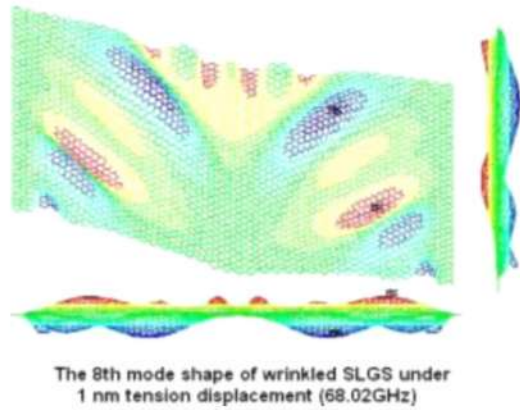
Vibration characteristics of wrinkled single-layered graphene sheets

Original Research Article

Pages 1812-1823

C.G. Wang, L. Lan, Y.P. Liu, H.F. Tan, X.D. He

Graphical abstract



Highlights

► We propose a pseudo beam method using MSM model and 3-node beam elements. ► We analyze the characteristics of the primary and secondary wrinkling bifurcation of SLGS. ► We evaluate the effects of the wrinkles on the vibration characteristics of SLGS. ► We understand the effects of aspect ratio on the vibration behaviors of wrinkled SLGS. ► We propose a prediction model to estimate the natural frequency of wrinkled SLGS.

Overall response of viscoelastic composites and polycrystals: exact asymptotic relations and approximate estimates

Original Research Article

Pages 1824-1838

R. Brenner, P. Suquet

Circular prismatic dislocation loops in elastic bodies with spherical free surfaces

Original Research Article

Pages 1839-1857

A.L. Kolesnikova, M.Yu. Gutkin, S.A. Krasnitckii, A.E. Romanov