**Research articles**

A fully nonlinear, dynamically consistent numerical model for solid-body ship motion. I. Ship motion with fixed heading 911
R.-Q. Lin & W. Kuang

A computational study of the molecular and crystal structure and selected physical properties of octahydrodissilasequioxane-(Si2O3H2)4. I. Electronic and structural aspects 928
C. J. H. Schutte & J. A. Pretorius

Asymptotic estimates for Stieltjes constants: a probabilistic approach 954
J. A. Adell

Waves and damage in structured solids with multi-scale resonators 964
I. S. Jones, A. B. Movchan & M. Gei

Collapse mechanism maps for a hollow pyramidal lattice 985
S. M. Pingjie, N. A. Fleck, V. S. Deshpande & H. N. G. Wadley

An alternative criterion in heat transfer optimization 1012

Analytical treatment of cold field electron emission from a nanowall emitter, including quantum confinement effects 1029

Hybrid approach to analysis of β-sheet structures based on signal processing and statistical consideration 1052
V. Vojisavljevic, E. Pirogova, D. M. Davidovic & I. Cosic

Uniform asymptotics of the coefficients of unitary moment polynomials 1073
G. A. Hiary & M. O. Rubinstein

Optimum structure to carry a uniform load between pinned supports: exact analytical solution 1101
A. Tyas, A. V. Pichugin & M. Gilbert

Gaussian curvature from flat elastica sheets 1121
C. D. Modes, K. Bhattacharya & M. Warner

Applying the method of normal forms to second-order nonlinear vibration problems 1141
S. A. Neild & D. J. Wagg

Resonant instability in two-dimensional vortex arrays 1164
P. Luzzatto-Fegiz & C. H. K. Williamson

A study on the principle of maximum dissipation for coupled and non-coupled non-isothermal processes in materials 1186
K. Hackl, F. D. Fischer & J. Svoboda

The helicity and vorticity of liquid-crystal flows 1197
F. Gay-Balmaz & C. Tronci

**Corrections**

Fractal solids, product measures and fractional wave equations 1214
J. Li & M. Ostoj-Starzewski