

- Dynamic buckling of a rectangular orthotropic plate. R. E. Ekstrom (AIAA J) 1655
- Finite deflection of a deep arch with boundary imperfections. Arup Chatopadhyay and Gurbachan Dhatt (AIAA J, TN) 235
- Stiffness matrix for a beam with an axial force. Dana Young (AIAA J, TN) 246
- Curved finite elements by the method of initial strains. James A. Stricklin and Joe R. Tillerson (AIAA J, TN) 249
- Self-weight-buckling of vertical circular cylindrical shells. D. J. Johns (AIAA J, TN) 392
- Buckling of a simply-supported beam between two unattached elastic foundations. Alan Burkhard and Warren Young (AIAA J, TN) 406
- Edge buckling of cylindrical shells with low inplane shear moduli. Donald E. Johnson and Roland J. Boucher (AIAA J, TN) 551
- Forced motion of lumped mass systems including the effect of axial force. Paul X. Bellini (JSR, EN) 610
- Buckling of orthotropic, curved, sandwich panels in shear and axial compression. Otha B. Davenport and Charles W. Bert (JA, EN) 632
- Postbuckling behavior of orthotropic skew plates. K. A. V. Pandalai and M. Sathymoorthy (AIAA J, TN) 731
- Advanced elastic postbuckling analysis by a perturbation procedure. L. W. Rehfield (AIAA J, TN) 759
- Determination of stiffness and critical loads of a circular plate from a simple bending test. George J. Simitses (AIAA J, TN) 1208
- Vibration and stability of nondivergent elastic systems. C. Sundararajan (AIAA J, TN) 1418
- Buckling of segments of toroidal shells. V. I. Weingarten, D. R. Veronda, and S. S. Saghera (AIAA J, TN) 1422
- Unified plastic yield criterion for ductile solids. Manoj Maitra, Kamallesh Majumdar, and Aniruddha Das (AIAA J, TN) 1428
- Buckling of toroidal shells under hydrostatic pressure. Peter F. Jordan (AIAA J, TN) 1439
- Stability analysis of cylinders with circular cutouts. B. O. Almroth, F. A. Brogan, and M. B. Marlowe (AIAA J, TN) 1582
- Effect of higher order terms in certain nonlinear finite element models. J. T. Oden, H. U. Akay, and C. P. Johnson (AIAA J, TN) 1589
- Design of least weight structures for prescribed buckling load. Kalayya Narayana Murthy and Paul Christiano (AIAA J, TN) 1773
- Transverse vibrations related to stability of curved anisotropic plates. R. C. Fortier (AIAA J, TN) 1782
- Comment on "Thermally induced vibration and flutter of a flexible boom." A. Das (JSR, TC) 288
- Reply by author to A. Das. Yi-Yuan Yu (JSR, TC) 288
- Comment on "Lateral vibration and stability relationship of elastically restrained circular plates." K. Singa Rao and C. L. Amba Rao (AIAA J, TC) 1056
- Potential energy of a normal pressure field acting on an arbitrary shell. Izhak Sheinman and Yair Tene (AIAA J, TC) 1216
- Comment on "Lateral vibration and stability relationship of elastically restrained circular plates." Alexander H. Flax (AIAA J, TC) 1599
- Reply by authors to A. H. Flax. K. Singa Rao and C. L. Amba-Rao (AIAA J, TC) 1599
- Structural Static Analysis**
- Stress distribution and displacements in a lubricated elastic seal. F. Edward Ehlers (JA, SYN) 3
- Photoelastic analysis of an orthotropic ring under diametral compression. R. Prabhakaran (AIAA J, SYN) 777
- Static and dynamic analysis of mooring lines. Pin Yu Chang and Walter D. Pilkey (JH) 29
- Bending of nonuniform plates with asymmetric thickness variation—Inclusion of shear deformation. S. B. Gulati and O. Ozaltin (AIAA J) 174
- Shape functions and the accuracy of arch finite elements. Isaac Fried (AIAA J) 287
- Evaluation of solution procedures for material and/or geometrically nonlinear structural analysis. James A. Stricklin, Walter E. Haisler, and Walter A. Von Riesenmann (AIAA J) 292
- Explicit addition of rigid-body motions in curved finite elements. Ghislain A. Fonder and Ray W. Clough (AIAA J) 305
- Nonlinear analysis of orthotropic skew plates. R. S. Alwar and N. Ramachandra Rao (AIAA J) 495
- Nonlinear finite element analysis of sandwich shells of revolution. Parviz Sharifi and E. P. Popov (AIAA J) 715
- Analysis of centrifugal stresses in anisotropic viscoelastic cylinder. S. R. Moghe (AIAA J) 723
- Stresses in a fiber-reinforced elastic sheet containing a circular hole. C. I. Chang and H. D. Conway (AIAA J) 806
- Inelastic buckling of eccentrically loaded columns. N. C. Huang (AIAA J) 974
- Optimal vs the stiffened circular plate. George J. Simitses (AIAA J) 1409
- A certain type of ill-conditioned stiffness matrix. Ki-Shun Chu (AIAA J, TN) 106
- Stiffness matrix for a beam with an axial force. Dana Young (AIAA J, TN) 246
- Curved finite elements by the method of initial strains. James A. Stricklin and Joe R. Tillerson (AIAA J, TN) 249
- Stress-strain relations for materials with different tension, compression yield strengths. Mark Hartzman (AIAA J, TN) 378
- Generalized hybrid stress finite-element models. John P. Wolf (AIAA J, TN) 386
- Improved hardening theory for cyclic plasticity. Robert G. Vos and William H. Armstrong (AIAA J, TN) 400
- Elimination of degrees of freedom by structural splining. Hermann J. Hassig (AIAA J, TN) 405
- Differential equations for asymmetric bending of circular sandwich plates. Jao-Shiun Kao (AIAA J, TN) 573
- Finite deflection of a shallow spherical membrane. Dallas G. Smith, John Peddieson Jr., and Chin-Jer Chung (AIAA J, TN) 736
- Effect of out-of-planeness of membrane quadrilateral finite elements. Raphael T. Haftka and James C. Robinson (AIAA J, TN) 742
- Effect of out-of-planeness of membrane quadrilateral finite elements. Raphael T. Haftka and James C. Robinson (AIAA J, ERR) 1792
- Determination of stiffness and critical loads of a circular plane from a simple bending test. George J. Simitses (AIAA J, TN) 1208
- Inextensional approximations in cylindrical shells. James H. Williams Jr. (AIAA J, TN) 1213
- Limitation of boundary residual methods. J. P. Dugan (AIAA J, TN) 1330
- Transverse shear in laminated plate theories. Pei Chi Chou and Joseph Carleone (AIAA J, TN) 1333
- Deflection function for the asymmetrical bending of circular plates. Gerard C. Pardoan (AIAA J, TN) 1341
- Introduction of shear deformations into a thin plate displacement formulation. Bruce M. Irons and Abdur Razzaque (AIAA J, TN) 1438
- Effect of higher order terms in certain nonlinear finite element models. J. T. Oden, H. U. Akay, and C. P. Johnson (AIAA J, TN) 1589
- Comment on "Analysis of a clamped skew plate under uniform loading." William A. Nash (AIAA J, TC) 255
- Potential energy of a normal pressure field acting on an arbitrary shell. Izhak Sheinman and Yair Tene (AIAA J, TC) 1216
- Comment on "Finite elements for axisymmetric solids under arbitrary loadings with nodes on origin." Karl E. Buck (AIAA J, TC) 1357
- Reply by author to K. E. Buck. Ted Belytschko (AIAA J, TC) 1358
- Plane stress analysis of an annular disk with distorted inner hole. Thomas J. Kim (AIAA J, ERR) 768
- Thermal Stresses**
- Vibration of thermally stressed plates with various boundary conditions. Cecil D. Bailey (AIAA J) 14
- Thermal shielding by subliming volume reflectors in convective and intense radiative environments. John T. Howe, Michael J. Green, and Kenneth C. Weston (AIAA J) 989
- Thermal shielding by subliming volume reflectors in convective and intense radiative environments. John T. Howe, Michael J. Green, and Kenneth C. Weston (AIAA J, ERR) 1600
- Nonsymmetric buckling of cylinders with axisymmetric thermal discontinuities. David Bushnell (AIAA J) 1292
- Material design concepts for filament-wound, graphite-graphite heatshields: Further analysis. Tommy R. Guess and Charles W. Bert (JSR, EN) 159
- Failure criterion for a propellant of spherical solid rocket motor. Y. Toda, T. Nagaoka, Z. Ueno, Y. Okada, and T. Kunio (JSR, EN) 807
- Coupled thermally induced vibrations of beams. A. G. Seibert and J. S. Rice (AIAA J, TN) 1033
- Dynamically-induced large deformations of multilayer, variable thickness shells. John W. Leech, Emmett A. Witmer, and Luigi Morino (AIAA J, TN) 1189
- Comment on "Thermally induced vibration and flutter of a flexible boom." A. Das (JSR, TC) 288
- Reply by author to A. Das. Yi-Yuan Yu (JSR, TC) 288
- THERMOPHYSICS AND THERMOCHEMISTRY**
- Atomic, Molecular, and Plasma Properties**
- Looking at the solar system in the far-ultraviolet. Robert R. Meier (A/A, October) 18
- Prospecting for energy. Jerry Grey (A/A, August) 24
- Electrical conductivity and total emission coefficient of air plasma. P. W. Schreiber, A. M. Hunter II, and K. R. Benedetto (AIAA J) 815
- Investigation of the discharge structure in a noble gas alkali MHD generator plasma: Part I. G. Brederlow, K. J. Witte, and H. Zinko (AIAA J) 1065
- Investigation of the discharge structure in a rare gas alkali MHD generator plasma: Part II. G. Brederlow and K. J. Witte (AIAA J) 1072
- Influence of gradient of velocity upon the resonant radiative transfer in plasma flows. P. Valentin, M. Pinegre, and M. Terrier (AIAA J) 1698
- Chemical modeling experimental facility. A. Mandl, S. A. Fogelson, and S. D. Hester (AIAA J) 1711
- Ion intensity measurement in a plasma reaction channel. J. H. Mullen, J. M. Madson, and L. N. Medgyesi-Mitschang (AIAA J, TN) 1031
- New thermodynamic functions for the C₃ molecule. W. E. Pearson and W.

- C. Davy (AIAA J, TN) 1207
 Nitrogen temperature determination in arc tunnel air flows. S. S. Lazdinis and R. F. Carpenter (AIAA J, TN) 1416
 CO₂ laser radiation absorption in SF₆-air mixtures. John D. Anderson Jr., Jerry L. Wagner, and Joseph Knott (AIAA J, TN) 1424

Heat Conduction

- Plastic set of smooth large radii of curvature thermal conductance specimens at light loads. Daniel J. McKinzie Jr. (AIAA J, SYN) 263
 Heat conduction in slabs with uniform heat sources and radiative boundary conditions. Benjamin T. F. Chung and L. T. Yeh (JSR, SYN) 483
 Additives for heat-transfer reduction in the propellant combinations N₂O₄-MMH and N₂O₄-A-50. K. Berman, T. Albanese, A. Blessing, and N. Roth (JSR) 493
 Nonlinear least squares—An aid to thermal property determination. D. M. Curry and S. D. Williams (AIAA J) 670
 Electrical conductivity and total emission coefficient of air plasma. P. W. Schreiber, A. M. Hunter II, and K. R. Benedetto (AIAA J) 815
 Thermal shielding by subliming volume reflectors in convective and intense radiative environments. John T. Howe, Michael J. Green, and Kenneth C. Weston (AIAA J) 989
 —Thermal shielding by subliming volume reflectors in convective and intense radiative environments. John T. Howe, Michael J. Green, and Kenneth C. Weston (AIAA J, ERR) 1600
 Integral method for nonlinear transient heat transfer in a semi-infinite solid. Benjamin T. F. Chung and L. T. Yeh (JSR, EN) 88
 —Integral method for nonlinear transient heat transfer in a semi-infinite solid. Benjamin T. F. Chung and L. T. Yeh (JA, ERR) 688
 A temperature extrapolation method for hollow cylinders. Murray Imber (AIAA J, TN) 117
 Thermal conductivity of mixed-composition plasma-sprayed coatings. R. L. Newman and W. C. Spicer (AIAA J, TN) 401
 Transient temperature distribution of an anisotropic half space. Joseph Padovan (AIAA J, TN) 565
 Optimal skin thickness variations for active cooled panels. R. D. Wagner (JA, EN) 572
 Modified separable Kernel method for heat conduction with a nonlinear boundary condition. A. L. Crosbie and S. K. Banerjee (AIAA J, TN) 744
 Optimum rectangular radiative fins having temperature-variant properties. A. Campo and H. S. Wolko (JSR, EN) 811
 Coupled thermally induced vibrations of beams. A. G. Seibert and J. S. Rice (AIAA J, TN) 1033
 Reflectance and unsteady temperature distribution of diffuse reflectors. Kenneth C. Weston and R. S. Reddy (AIAA J, TN) 1775

Liquid and Solid Thermophysical Properties

Material Ablation

- Effect of additives on ablation of phenolic-silica composites. John D. Chidley and J. D. Seader (JSR) 7
 Heat-transfer and ablation-rate correlations for re-entry heat-shield and nosetip applications. Kurt E. Putz and Eugene P. Bartlett (JSR) 15
 Graphite ablation in combined convective and radiative heating. Roy M. Wakefield and David L. Peterson (JSR) 149
 PAET entry heating and heat protection experiment. Nick S. Vojvodich (JSR) 181
 Ablation of ATJ graphite at high temperatures. John H. Lundell and Robert R. Dickey (AIAA J) 216
 Decomposition rate of a phenolic resin. William M. Bishop and W. J. Minkowycz (AIAA J) 438
 Effect of thermally expanding surfaces on aerodynamic roll torques for cones. John B. McDevitt (AIAA J) 505
 Verification of a comprehensive thrust chamber compatibility model for liquid rocket engines. W. L. Pritz and R. J. Schoner (JSR) 558
 Similarity analysis for the surface ablation of silica-reinforced composites. Chia-Lung Hsieh and J. D. Seader (JSR) 797
 Oxidation of Poco AXF-Q1 graphite in air. John A. Segletes (JSR) 803
 A surface flow approach for predicting crosshatch patterns. R. M. Grabow and C. O. White (AIAA J) 841
 Ablation and radiation coupled viscous hypersonic shock layers. Carl D. Engel, Richard C. Farmer, and Ralph W. Pike (AIAA J) 1174
 Surface ablation of silica-reinforced composites. Chia-Lung Hsieh and J. D. Seader (AIAA J) 1181
 Crosshatch surface patterns—Comparison of experiment with theory. C. O. White and R. M. Grabow (AIAA J) 1316
 Stagnation region radiative heating with steady-state ablation during Venus entry. Kenneth Sutton and R. A. Falanga (JSR, EN) 155
 Material evaluation under direct rocket exhaust impingement. J. T. Fredericks and M. Shorr (JSR, EN) 533
 A mechanism for ablation-induced spin-up. Lars E. Ericsson and Donald A. Price Jr. (AIAA J, TN) 567
 Laser activated, model surface recession compensator system for testing ablative materials. Ronald A. Williamson, W. A. Rinehart, and Ronald R. Williams (JSR, EN) 684
 Modeling sublimation of a charring ablator. John F. Balhoff and Ralph W. Pike (JSR, EN) 822

- Assessment of chemical nonequilibrium for massively ablating graphite. Kenneth A. Lincoln, John T. Howe, and Tsong-Mou Liu (AIAA J, TN) 1198
 New thermodynamic functions for the C₃ molecule. W. E. Pearson and W. C. Davy (AIAA J, TN) 1207
 Role of the anelastic behavior of the ablation material on cross-hatching. Hans W. Stock (AIAA J, ERR) 1056

Radiation and Radiative Heat Transfer

- Heat conduction in slabs with uniform heat sources and radiative boundary conditions. Benjamin T. F. Chung and L. T. Yeh (JSR, SYN) 483
 Variational solution to the radiative equation by the use of a step function II. Extension to nonlinear case by iteration method. Kenneth K. Yoshikawa (AIAA J) 19
 Application of the Monte Carlo method for radiation exchange in spacecraft. Jochen Doenecke (JSR) 652
 Electrical conductivity and total emission coefficient of air plasma. P. W. Schreiber, A. M. Hunter II, and K. R. Benedetto (AIAA J) 815
 Thermal shielding by subliming volume reflectors in convective and intense radiative environments. John T. Howe, Michael J. Green, and Kenneth C. Weston (AIAA J) 989
 —Thermal shielding by subliming volume reflectors in convective and intense radiative environments. John T. Howe, Michael J. Green, and Kenneth C. Weston (AIAA J, ERR) 1600
 Emittance of semi-infinite absorbing and isotropically scattering medium with refractive index greater than unity. B. F. Armaly, T. T. Lam, and A. L. Crosbie (AIAA J) 1498
 Influence of gradient of velocity upon the resonant radiative transfer in plasma flows. P. Valentin, M. Pinegre, and M. Terrier (AIAA J) 1698
 Integral method for nonlinear transient heat transfer in a semi-infinite solid. Benjamin T. F. Chung and L. T. Yeh (JSR, EN) 88
 —Integral method for nonlinear transient heat transfer in a semi-infinite solid. Benjamin T. F. Chung and L. T. Yeh (JA, ERR) 688
 Density inhomogeneity in a laser cavity due to energy release. Allen E. Fuhs (AIAA J, TN) 374
 Modified separable Kernel method for heat conduction with a nonlinear boundary condition. A. L. Crosbie and S. K. Banerjee (AIAA J, TN) 744
 Optimum rectangular radiative fins having temperature-variant properties. A. Campo and H. S. Wolko (JSR, EN) 811
 Emittance of an isothermal, isotropically scattering medium. A. L. Crosbie (AIAA J, TN) 1203
 CO₂ laser radiation absorption in SF₆-air mixtures. John D. Anderson Jr., Jerry L. Wagner, and Joseph Knott (AIAA J, TN) 1424
 Annular ring view factors. R. L. Reid and J. S. Tennant (AIAA J, TN) 1446
 Reflection function for an isotropically scattering finite medium. A. L. Crosbie (AIAA J, TN) 1448
 Reflectance and unsteady temperature distribution of diffuse reflectors. Kenneth C. Weston and R. S. Reddy (AIAA J, TN) 1775
 Eigenvalues and eigenvectors for solutions to the radiative transport equations. J. A. Roux, D. C. Todd, and A. M. Smith (AIAA J, ERR) 767
- ## Thermal Modeling and Experimental Thermal Simulation
- Development of a phase change thermal control device. B. G. Schelden and J. O. Golden (JSR, SYN) 99
 Thermal performance evaluation of RSI panel gaps for space shuttle orbiter. R. A. Brewer, A. R. Saydah, D. E. Nestler, and D. E. Florence (JSR) 23
 Ion thruster thermal characteristics and performance. L. Wen, J. D. Crotty, and E. V. Pawlik (JSR) 35
 Graphite ablation in combined convective and radiative heating. Roy M. Wakefield and David L. Peterson (JSR) 149
 Monte Carlo treatment of data uncertainties in thermal analysis. John R. Howell (JSR) 411
 Thermal scale modeling of radiation-conduction-convection systems. Roger L. Shannon (JSR) 485
 Cryogenic liquid O₂/H₂ reaction control systems for space shuttle. P. J. Kelly, H. B. McKee, and T. C. Patten (JSR) 496
 Design of graphite nosetips for ballistic re-entry. P. J. Schneider, R. D. Teter, W. D. Coleman, and R. M. Heath (JSR) 592
 Application of the Monte Carlo method for radiation exchange in spacecraft. Jochen Doenecke (JSR) 652
 Nonlinear least squares—An aid to thermal property determination. D. M. Curry and S. D. Williams (AIAA J) 670
 Spacecraft thermal environments. John J. Chapter (JSR, EN) 93
 Prediction of long-term heat-pipe performance from accelerated life tests. E. Baker (AIAA J, TN) 1345
 Graded thermal barrier—A new approach for turbine engine cooling. J. R. Cavanagh, K. R. Cross, R. L. Newman, and W. C. Spicer (JA, ERR) 192
 Application of thermal barriers to high-temperature engine components. R. L. Newman, K. R. Cross, W. C. Spicer, H. D. Sheets, and T. D. Driskell (JA, ERR) 256

Thermal Surface Properties

- Plastic set of smooth large radii of curvature thermal conductance specimens at light loads. Daniel J. McKinzie Jr. (AIAA J, SYN) 263
- Additives for heat-transfer reduction in the propellant combinations N_2O_4 -MMH and N_2O_4 -A-50. K. Berman, T. Albanese, A. Blessing, and N. Roth (JSR) 493
- Emittance of semi-infinite absorbing and isotropically scattering medium with refractive index greater than unity. B. F. Armaly, T. T. Lam, and A. L. Crosbie (AIAA J) 1498
- Emittance of an isothermal, isotropically scattering medium. A. L. Crosbie (AIAA J, TN) 1203
- Reflection function for an isotropically scattering finite medium. A. L. Crosbie (AIAA J, TN) 1448

Thermochemistry and Chemical Kinetics

- Entropy in nonequilibrium nozzle flows of vibrationally relaxing diatomic gases. Ryuji Ishii (AIAA J, SYN) 137
- Theoretical and measured electron-density distributions at high altitudes. Sang-Wook Kang, W. Linwood Jones and Michael G. Dunn (AIAA J) 141

- Ultraviolet radiation from the bow shock of a sphere during atmospheric re-entry. Leonilda A. Farrow and Arthur H. Fitch (AIAA J) 272
- Decomposition rate of a phenolic resin. William M. Bishop and W. J. Minkowycz (AIAA J) 438
- Measurement of emissions from jet engines in altitude test cells. J. Lloyd Grissom (JA) 475
- Effect of surface catalytic activity on stagnation heat-transfer rates. L. A. Anderson (AIAA J) 649
- Antenna admittance determination of electron density. Michael G. Dunn, Richard J. Blum, Calvin T. Swift, Fred B. Beck, and William L. Grantham (AIAA J) 1018
- Atomic recombination rate determination through heat-transfer measurement. Chul Park, Lewis A. Anderson, and Robert E. Sheldahl (AIAA J, TN) 372
- Modeling sublimation of a charring ablator. John F. Balhoff and Ralph W. Pike (JSR, EN) 822
- Ion intensity measurement in a plasma reaction channel. J. H. Mullen, J. M. Madson, and L. N. Medgyesi-Mitschang (AIAA J, TN) 1031
- Assessment of chemical nonequilibrium for massively ablating graphite. Kenneth A. Lincoln, John T. Howe, and Tsong-Mou Liu (AIAA J, TN) 1198