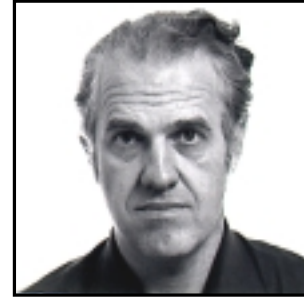


## CARLOS A. FELIPPA

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1984 photo.

## RESEARCH INTERESTS

Nonlinear and Dynamic Structural Analysis, Finite Element Methods, Software Architectures for Engineering Computations, Parallel Processing. Special interest in model-based simulation of Coupled Fields and Multiphysics problems: elastoacoustics, aeroelasticity, aeroservoelasticity, thermomechanics and electrothermomechanics.

## EXPERIENCE

### UNIVERSITY OF COLORADO, Boulder, Colorado

1986–date Professor of Aerospace Engineering. Director, Center for Space Structures and Controls (1/89–6/91). (Associate Director, 6/86–12/88). Participated in the formation and growth of the Center for Space Structures and Controls (now Center for Aerospace Structures). This center focuses on multidisciplinary sponsored research in aerospace structures, computational and experimental mechanics. Participated in the creation of a graduate instructional program in Structures, Structural Dynamics and Controls within the Aerospace Engineering Department.

### LOCKHEED MISSILES & SPACE CO., Sunnyvale, California

1980–1986 Senior Staff Scientist, Applied Mechanics Laboratory, Lockheed Palo Alto Research Laboratory. Responsible for architecture of NICE (Network of Interactive Computational Elements), an integrated software system for computational mechanics. This system was chosen by NASA/LaRC in 1984 as Testbed candidate for integration of computational-mechanics research pertinent to the space program. Used at LMSC in the design of the Poseidon nuclear tipped missile system for the Trident II submarine fleet.

1977–1980 Staff Scientist, Applied Mechanics Laboratory, Lockheed Palo Alto Research Laboratory. Conducted research in nonlinear structural analysis, structural dynamics, coupled problems, minimum weight optimization by mathematical programming, constraint handling by augmented Lagrangian methods, interactive control of applications software, and database management technology. Formulated and developed software for the analysis of nonlinear structures by finite element methods. Collaborated with Lockheed Ocean Systems in commercial and classified projects.

1971–1976 Research Scientist, Structures Laboratory, Lockheed Palo Alto Research Laboratory. Formulated and implemented computational techniques for finite element analysis of structures, structural dynamics, and fluid-structure interaction problems.

THE BOEING COMPANY, Commercial Airplane Division, Seattle, Washington

- 1969–1970      Research Engineer, Structural Analysis Research Group. Developed stress and stability analysis programs for advanced composite structures, and formulated techniques for automated structural optimization. Participated in analysis of 747 and SST components by finite element methods.
- 1968–1969      Research Specialist, Mathematical Analysis Unit. Developed digital computing techniques for analysis of aircraft structures, with emphasis on finite-deflection models for creep-forming of aircraft wings, and structural eigenvalue problems.

UNIVERSITY OF CALIFORNIA, Berkeley, California

- 1967–1968      Post-Doctoral Research Associate. Developed applications of finite element methods to plates, shells and three-dimensional solids.
- 1963–1966      Research Assistant. As doctoral student (1964-66) developed refined finite element techniques for analysis of two-dimensional static and vibrations problems. Implemented the first FEM formulation that combined material and geometric nonlinearities. As MS student (1963-64) performed experimental testing work in reinforced concrete structures for the BART (Bay Area Rapid Transit) system.

**EDUCATION**

UNIVERSITY OF CALIFORNIA, Berkeley, California

- 1966              Ph.D., Civil Engineering. Dissertation: “Refined Finite Element Analysis of Linear and Nonlinear Two-Dimensional Structures.” Thesis advisor: R. W. Clough.
- 1964              M.S., Civil Engineering. Advisor: K. F. Pister.

UNIVERSIDAD NACIONAL DE CORDOBA, Córdoba, Argentina

- 1963              Ingeniero Civil

**ACCESS AUTHORIZATION**

Naturalized US Citizen. Clearances: Secret 1972–79 and top-secret 1979–86, while employed at Lockheed Missiles and Space Company.

**PROFESSIONAL ACTIVITIES**

Member, Society for Industrial and Applied Mathematics, American Society of Mechanical Engineers (nominated for Fellow), American Institute for Aeronautics and Astronautics, and U.S. Association for Computational Mechanics (executive board member and Fellow).

Editorial or Advisory Board Member for *Advances in Engineering Software*, *Archives of Computational Methods in Engineering*, *Computer Methods in Applied Mechanics and Engineering*, *Computers and Structures*, *Engineering Computations*, *Finite Elements in Analysis and Design*, *International Journal for Numerical Methods in Engineering*, *Journal of Computing Systems in Engineering*, *Revista Internacional de Métodos Numéricos para Cálculo y Diseño en Ingeniería*.

Invited keynote speaker and/or lecturer on numerous occasions. Has taught short courses and seminars on finite element analysis, nonlinear equation solving, interactive applications programming and database management systems.

## HONORS AND AWARDS

Duarte y Quirós prize to top Ingeniero Civil graduate, Universidad Nacional de Córdoba, 1963.  
Control Data Corp. PACER Fellowship PI, 1986–1988.  
AGARD Lecturer at ONERA (Paris, France), and LTAS (Liège, Belgium), 1988.  
McDonnell-Douglas Foundation Award to set up Structural Dynamics and Control Laboratory, Dec 1991.  
SAE Arch. T. Colwell Merit Award, September 1993  
NTNF Visiting Scholar Fellowship, August–December 1993.  
Fellow, US Association of Computational Mechanics (USACM), July 1995.  
Alexander von Humboldt Research Award, selected 1995, conferred 1997.  
Honorary Member, Argentine Association of Computational Mechanics, 1997.  
Fellow, International Association of Computational Mechanics (IACM), July 1998.  
Computational Sciences Award, US Association of Computational Mechanics, August 1999.  
Summer Faculty Fellowship, Sandia National Laboratories, Albuquerque, June-August 2001.  
Foreign Investigator Fellowship, Ministerio de Educacion y Cultura, Madrid, Spain, to support Visiting Scientist status for research at CIMNE, Barcelona, Spain, May-July 2002, May-June 2005, May-June 2006 and May-June 2007.  
Sociedad de Metodos Numericos en Ingenieria (SEMNI) Prize, Madrid, June 2002  
Visiting Faculty Award, Conservatoire National des Arts et Metiers (CNAM), Paris, May-July 2004.  
NASA Software Development Award, NASA Langley RC, announced 2006, awarded 2007.  
Elected Permanent Member-at-Large, USACM Executive Committee, 2007.  
IACM Computational Mechanics Award, awarded at WCCM9, Sydney, Australia, July 2010.

## UNDERGRADUATE & GRADUATE COURSES CREATED AT CU

*Introduction to Finite Element Methods*, ASEN 5007, Fall 1986, repeated every year. Web site:  
<http://caswww.colorado.edu/courses.d/IFEM.d/Home.html>

*Nonlinear Finite Element Methods*, ASEN 5007, Spring 1987, repeated every 2-3 years. Web site:  
<http://caswww.colorado.edu/courses.d/NFEM.d/Home.html>

*Advanced Finite Element Methods*, ASEN 5637, Spring 1990, repeated every 2-3 years. Web site:  
<http://caswww.colorado.edu/courses.d/AFEM.d/Home.html>

*Variational Methods in Mechanics* (in collaboration with Charbel Farhat), Fall 1988, offered irregularly 1988-1993, contents folded now into ASEN 5637.

*Structures*, ASEN 3112, 4-credit junior core course created as part of AES Curriculum 2000, Offered since Fall 1998, repeated every Fall. Co-taught in collaboration with Charbel Farhat (1998), Jason Hinkle (1999–2000), K. C. Park (2001–2002) and M. Hussein (2008–2009). Replaces Structures 1 and 2 of previous curriculum. Partly restructured 2007-2010.

*Object-Oriented Finite Element Programming*, ASEN 5519, offered Fall 1992.

*Mechanics of Aerospace Structures*, ASEN 5012, offered Fall 1996 and 1997.

*Finite Element Programming with Mathematica*, ASEN 5519, offered Fall 1997.

*Fluid-Structure Interaction and Multiphysics*, ASEN 5519, offered Fall 2004.

## MAJOR RESEARCH & INFRASTRUCTURE SUPPORT 1992-DATE

- National Science Foundation. High Fidelity Simulation for Heterogeneous Civil and Mechanical Systems. PI: C. A. Felippa. Co-PIs: K. C. Park. Amount: \$496K, September 2002-2006.
- National Science Foundation: ESC-9217394. Title: High Performance Computational Methods for Coupled Fields and GAFD Turbulence (a Grand Challenge Applications award). PIs: C. A. Felippa and J. Toomre. Co-PIs: C. Farhat, G. Graefe, D. Grunwald, J. Hart, J. Herring, C. Laney, J. Mandel, O. McBryan, J. McWilliams, K. C. Park and P. Woodward. Amount: \$5.1M, 1992-1997.  
Renewed on October 1997 under title: High Performance Simulation of Multiphysics Problems in Turbulence, Control and Structural Design, ECS-9725004. PI: C. A. Felippa, Coordinating PIs: C. Farhat, J. Mandel, O. McBryan, co-PIs: M. Balas, X.-C. Cai, D. Grunwald, D. Heimbigner, M. Lesoinne, K. C. Park. Amount: \$1.86M, Oct. 1997-April 2001, NCE to April 2003.
- National Science Foundation/Sandia National Labs Grant CTS-9732179. Title: Modeling, Simulation and Validation of High-Fidelity Structural Dynamical Systems, National Science Foundation, PI: K. C. Park, co-PI: C. A. Felippa, Amount: \$180K, 1998-2001.
- Department of Energy ASCI level II. Co-I; C. A. Felippa, PIs: T. Manteuffel, S. McCormick, C. Farhat and K. C. Park, Amount \$1.96M, 1999-2001.
- DOE/Sandia National Labs: Finite Elements for Salinas, PI: C. A. Felippa, Amount: \$91K, 1999-2002.
- Sandia National Laboratories, Parallel Computational Methods for Large-Scale Structural Dynamics, PI: K. C. Park, co-PIs: C. Farhat and C. A. Felippa, \$814K, 1996-1998.
- Sandia National Laboratories, A Matrix Free Algorithm for Solving Nonlinear Mechanics Problems. PI: K. C. Park, Co-PI: C. A. Felippa. \$460K, 1996-1999.
- Air Force Office of Scientific Research. Numerical Simulation of Three-Dimensional High G Dynamic Maneuvers of a Complete Aircraft Configuration. 1995-1998. PI: C. Farhat, co-PI: J. Mandel, co-Is: X.-C. Cai and C. Felippa. Amount: \$1.8M, 1998-2000.
- National Science Foundation. Graduate Research Traineeship: Integrating HPCC into the Physical Sciences, PI: O. McBryan. Co-PIs: C. A. Felippa and J. Toomre. Supports graduate students only. Amount: \$635K, 1994-2002.
- National Science Foundation. Academic Research Infrastructure: Acquisition of a Grand Challenge Data Laboratory. Equipment purchase only. PI: O. McBryan. Co-PIs: C. A. Felippa and J. Toomre. Amount: \$800K, 1996-2001.

## BOOKS IN PREPARATION

*Introduction to Finite Element Methods*, approx. 700 pp., based on course ASEN 5007.

*Geometrically Nonlinear Finite Element Methods*, approx. 650 pp., based on course ASEN 5017.

*Advanced Linear Finite Element Methods*, approx. 550 pp., based on course ASEN 5367.

## PUBLICATIONS

1. C. A. Felippa, K. C. Park and M. R. Ross, A classification of interface treatments for FSI, contributed Chapter to H-J. Bungartz, M. Mehl and M. Schäfer (eds.), Fluid Structure Interaction, *Lecture Notes in Computational Science and Engineering* 73, Chapter 2, pp 27–52, Springer-Verlag, 2010.
2. K. C. Park, R. Ohayon, C. A. Felippa and J. A. Gonzalez, Partitioned Formulation of Internal and Gravity

- Waves Interacting with Flexible Structures, *Comp. Meth. Appl. Mech. Engrg.*, accepted for publication, 2009, posted online at <http://dx.doi.org/10.1016/j.cma.2009.11.005>.
3. K. C. Park, C. A. Felippa and R. Ohayon, The principal D'Alembert-Lagrange equations and applications to flexible floating systems, *Int. J. Numer. Meth. Engrg.*, Vol. 77, 2009, 1072–1099
  4. M. R. Ross, M. A. Sprague, C. A. Felippa and K. C. Park, Treatment of acoustic fluid-structure interaction by localized Lagrange multipliers and comparison to alternative interface coupling methods, *Computer Methods in Applied Mechanics and Engineering* **198**, 986–1005, Feb 2009.
  5. N. dal Cortivo, C. A. Felippa, H. Bavestrello and W. T. M. Silva, Plastic buckling and collapse of thin shell structures, using layered plastic modeling and co-rotational ANDES finite elements, *Comp. Meth. Appl. Mech. Engrg.*, **198**, 785-798. Jan 2009.
  6. C. A. Felippa and K. C. Park, Model-based partitioned analysis of coupled problems, chapter 4 in *Computational Aspects of Structural Dynamics and Vibrations*, ed. by G Sandberg and R. Ohayon, CISM Courses and Lectures, vol. 505, Springer-Verlag, Berlin, 2008, 171–216.
  7. M. R. Ross, C. A. Felippa, K. C. Park and M. A. Sprague, Treatment of acoustic fluid-structure interaction by localized Lagrange multipliers: Formulation, *Comp. Meth. Appl. Mech. Engrg.*, **197**, 2008, 3057–3079.
  8. E. Oñate and C. A. Felippa, Variational formulation of the FIC equations for solid mechanics and reaction-diffusion problems, *Comp. Meth. Appl. Mech. Engrg.*, submitted.
  9. J. A. González, K. C. Park and C. A. Felippa FEM and BEM coupling in elastostatics using localized Lagrange multipliers, *Int. J. Numer. Meth. Engrg.*, **69**, 2058–2074, 2007.
  10. C. A. Felippa and E. Oñate, Nodally exact Ritz discretizations of 1D diffusion-absorption and Helmholtz equations by variational FIC and modified equation methods, *Comput. Mech.*, **39**, 91–112, 2007.
  11. C. A. Felippa and K. C. Park, Synthesis tools for structural dynamics and partitioned analysis of coupled systems, chapter in *Engineering Structures under Extreme Conditions*, ed. by A. Ibrahimbegovic and B. Brank, IOS Press, Amsterdam, 50-110, 2006.
  12. K. C. Park, C. A. Felippa and R. Ohayon, Reduced order modeling in coupled systems: formulations and computational algorithms, chapter in *Engineering Structures under Extreme Conditions*, ed. by A. Ibrahimbegovic and B. Brank, IOS Press, Amsterdam, 267-289, 2006.
  13. C. A. Felippa, Construction of customized mass-stiffness pairs using templates, invited contribution to Special Issue in honor of A. K. Noor, *ASCE J. Aerospace*, **19:4**, 241–258, 2006.
  14. C. A. Felippa, Supernatural QUAD4: a template formulation, invited contribution to J. H. Argyris Memorial Issue, *Comp. Meth. Appl. Mech. Engrg.*, **195**, 5316–5342, 2006.
  15. J. A. González, K. C. Park, C. A. Felippa Partitioned formulation of frictional contact problems using localized Lagrange multipliers, *Commun. Numer. Meths. Engrg.*, **22**, 319–333, 2006.
  16. C. A. Felippa and B. Haugen, A unified formulation of small-strain corotational finite elements: I. Theory, *Comp. Meth. Appl. Mech. Engrg.*, **194**, 2285–2336, 2005.
  17. C. A. Felippa, K. C. Park and M. R. Ross, Maintaining unconditional stability in partitioned analysis methods for coupled systems, invited plenary lecture, *Proc. Computational Methods for Coupled Problems in Science and Engineering II*, ed. by E. Oñate, M. Papadrakakis and B. Schrefler, CIMNE, Barcelona, 2005, 52–55.
  18. C. A. Felippa and K. C. Park, Underwater shock analysis on stiffened shells: the source of staggered solution procedures, abstract in *Proc. 5th IACM Int. Conf. on Computation of Shells and Spatial Structures*, ed. by E. Ramm, W. A. Wall, K.-U. Bletzinger, and M. Bischoff, TU Munchen Press, 2005; extended abstract in CDROM.
  19. C. A. Felippa and E. Oñate, Nodally exact Ritz discretizations by variational FIC, Proceedings MekIT'05 3rd National Conference on Computational Mechanics (invited lecture), held at Trondheim, Norway, 23–42, May 2005.
  20. C. A. Felippa and K. C. Park, Taming complexity in the synthesis of partitioned analysis methods for coupled systems, abstract in *Proc. Computational Methods for Coupled Problems in Science and Engineering*, ed. by M. Papadrakakis, E. Oñate and B. Schrefler, CIMNE, Barcelona, 2005; full paper in CDROM.

21. C. A. Felippa, The amusing history of shear flexible beam elements, *IACM Expressions*, Issue 17, 15–19, Jan 2005.
22. C. A. Felippa and E. Oñate, Volumetric constraint models for anisotropic elastic solids, *J. Appl. Mech.*, **71**, No. 5, 731-734, 2004.
23. C. A. Felippa, A compendium of FEM integration rules for finite element work, *Engrg. Comp.*, **21**, 867–890, 2004.
24. C. A. Felippa, Optimal plate bending component for a thin-shell element, Proceedings 6th World Congress in Computational Mechanics, Beijing, China, Sept 5-10, 2004.
25. C. A. Felippa, A template tutorial, Chapter in *Computational Mechanics - Theory and Practice*, ed. by K.M. Mathisen, T. Kvamsdal and K.M. Okstad, CIMNE, Barcelona, Spain, 2004.
26. C. A. Felippa and K. C. Park, Synthesis tools for structural dynamics and partitioned analysis of coupled systems, Keynote paper chapter in *Multi-Physics and Multi-Scale Computer Models in Nonlinear Analysis and Optimal Design of Engineering Structures under Extreme Conditions*, ed. by A. Ibrahimbegovic and B. Brank, Proceedings NATO-ARW PST ARW980268, Ljubljana, Slovenia, 2004, 50-110.
27. K. C. Park, C. A. Felippa and R. Ohayon, Reduced order modeling in coupled systems: formulations and computational algorithms, Keynote paper chapter in *Multi-Physics and Multi-Scale Computer Models in Nonlinear Analysis and Optimal Design of Engineering Structures under Extreme Conditions*, ed. by A. Ibrahimbegovic and B. Brank, Proceedings NATO-ARW PST ARW980268, Ljubljana, Slovenia, 267-289, 2004.
28. C. A. Felippa, A study of optimal membrane triangles with drilling freedoms, *Comp. Meth. Appl. Mech. Engrg.*, Vol. 192, pp. 2125–2168, 2003.
29. C. A. Felippa and E. Oñate, Stress, Strain and energy splittings for anisotropic elastic solids under volumetric constraints, *Computers & Structures*, **81**, 1343-1358, 2003.
30. C. A. Felippa, A distortion insensitive four noded membrane quadrilateral that passes the patch test, in *Computational Fluid and Solid Mechanics*, ed. by K. J. Bathe et al., Elsevier Sci. Pubs., Amsterdam, 2003.
31. C. A. Felippa, The SS8 solid shell element: formulation and a Mathematica implementation, Center for Aerospace Structures, College of Engineering, University of Colorado, Report CU-CAS-02-03, March 2002, submitted for publication.
32. C. A. Felippa, The SS8 solid shell element: A Fortran implementation, Center for Aerospace Structures, College of Engineering, University of Colorado, Report CU-CAS-02-04, March 2002, submitted for publication.
33. C. A. Felippa and E. Oñate, Volumetric constraint models for anisotropic elastic solids, Center for Aerospace Structures, College of Engineering, University of Colorado, Report CU-CAS-02-08, July 2002, submitted for publication.
34. C. A. Felippa, A study of optimal membrane triangles with drilling freedoms, *Comp. Meth. Appl. Mech. Engrg.*, **192**, 2125–2168, 2003.
35. C. A. Felippa and E. Oñate, Stress, strain and Energy splittings for anisotropic elastic solids under volumetric constraints, *Computers & Structures*, **81**, 1343–1358, 2003.
36. C. A. Felippa, A Template Tutorial: Panels, families, clones, winners and losers, Center for Aerospace Structures, College of Engineering, University of Colorado, Report CU-CAS-02-17, Sept 2002, converted into a Template tutorial.
37. C. A. Felippa and K. C. Park, Fitting strains and displacements by minimizing dislocation energy, Proceedings of the Sixth International Conference on Computational Structures Technology, Prague, Czech Republic, September 2002, pp. 49-51 (complete text in CDROM)
38. C. A. Felippa, A History of matrix structural analysis: a play in 3 acts, Plenary Lecture, Proceedings Conferencia sobre Métodos Numéricos en Ingeniería V, Madrid, Spain, June 2002, SEMNI, Barcelona, 2002

39. G. Rebel, K. C. Park, C. A. Felippa, A contact formulation based on localized Lagrange multipliers: formulation and applications to two-dimensional problems, *Int. J. Numer. Meth. Engrg.*, **54**, 263–297, 2002.
40. K. C. Park, C. A. Felippa and G. Rebel, A simple algorithm for localized construction of non-matching structural interfaces, *Int. J. Numer. Meth. Engrg.*, **53**, 1261–1285, 2002.
41. C. A. Felippa and K. C. Park, The construction of free-free flexibility matrices for multilevel structural analysis, *Comp. Meth. Appl. Mech. Engrg.*, **191**, 2111–2140, 2002.
42. C. A. Felippa, Fraeijs de Veubeke: neglected discoverer of the "Hu-Washizu Functional," *IACM Expressions*, May 2002.
43. C. A. Felippa, A historical outline of matrix structural analysis: a play in three acts, *Computers & Structures*, **79**, 1313-1324, 2001.
44. K. C. Park, C. A. Felippa and R. Ohayon, Localized formulation of multibody systems, in *Computational Aspects of Nonlinear Systems with Large Rigid Body Motion* ed. by J. Ambrosio and M. Kleiber, NATO Science Series, IOS Press, 2001, 253–274.
45. C. A. Felippa, K. C. Park and G. Rebel, An inverse-free interface patch test for nonmatching FEM meshes, *Proc. First MIT Conf. Computational Solid and Fluid Mechanics*, Elsevier, 2001
46. C. A. Felippa, Optimal triangular membrane elements with drilling freedoms, *Proc. First MIT Conf. Computational Solid and Fluid Mechanics*, Elsevier, 2001
47. C. A. Felippa, Customizing high performance elements by Fourier methods, *Trends in Computational Mechanics*, ed. by W. A. Wall, K.-U. Bleitzinger and K. Schweizerhof, CIMNE, Barcelona, Spain, 283-296, 2001.
48. K. C. Park, C. A. Felippa and G. Rebel, Interfacing nonmatching finite element discretizations: the zero moment rule, in *Trends in Computational Mechanics*, ed. by W. A. Wall, K.-U. Bleitzinger and K. Schweizerhof, CIMNE, Barcelona, Spain, 355–367, 2001.
49. K. C. Park, C. A. Felippa and R. Ohayon, Partitioned formulation of internal fluid-structure interaction problems via localized Lagrange multipliers, *Comp. Meth. Appl. Mech. Engrg.*, **190**, 2989–3007, 2001.
50. C. A. Felippa, K. C. Park and C. Farhat, Partitioned analysis of coupled mechanical systems, Invited Plenary Lecture, 4th World Congress in Computational Mechanics, Buenos Aires, Argentina, July 1998, expanded version: *Comp. Meth. Appl. Mech. Engrg.*, **190**, 3247–3270, 2001.
51. C. A. Felippa, Customizing the mass and geometric stiffness of plane thin beam elements by Fourier methods, *Engrg. Comp.*, **18**, 286–303, 2001.
52. C. A. Felippa, Recent advances in finite element templates, Chapter 4 in *Computational Mechanics for the Twenty-First Century*, ed. by B.H.V. Topping, Saxe-Coburn Publications, Edinburgh, 71–98, 2000.
53. C. A. Felippa, A systematic approach to the element-independent corotational dynamics of finite elements, *Proc. IASS-IACM 2000, Fourth International Colloquium on Computation of Shell and Spatial Structures*, Chania-Crete, Greece, June 4–7, 2000.
54. K. C. Park, U. Gumaste and C. A. Felippa, A localized version of the method of Lagrange multipliers and its applications, *Comput. Mech.*, **24/6** 476–490, 2000.
55. K. C. Park and C. A. Felippa, A variational principle for the formulation of partitioned structural systems, *Int. J. Numer. Meth. Engrg.*, **47**, 395–418, 2000.
56. C. A. Felippa, On the original publication of the general canonical functional of linear elasticity, *J. Appl. Mech.*, **67/1**, 217–219, 2000.
57. C. A. Felippa, Recent developments in basic finite element technologies, in *Computational Mechanics in Structural Engineering - Recent Developments*, ed. by F. Y. Cheng and Y. Gu, Elsevier, Amsterdam, 141–156, 1999.
58. C. A. Felippa and C. Militello, Construction of optimal 3-node plate bending elements by templates, *Comput. Mech.*, **24/1**, 1–13, 1999.
59. K. C. Park and C. A. Felippa, A variational framework for solution method development in structural mechanics, *J. Appl. Mech.*, **65/1**, 242–249, 1998.

60. C. A. Felippa and C. Militello, Construction of optimal plate bending triangles by templates, in *Modeling and Simulation Based Engineering*. ed by S. N. Atluri and P. E. O'Donoghue, Tech Science Press, Palmdale, CA, 260–265, 1998.
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62. C. A. Felippa, ETA expressions for the high frequency impedance of a uniformly pulsating submerged torus, in *Computational Methods for Unbounded Domains*, ed. by T. L. Geers, Kluwer Academic Publishers, Dordrecht, Holland, 103–110, 1998.
63. F. J. Brito-Castro, C. Militello and C. A. Felippa, Parametrized variational principles in dynamics applied to the optimization of dynamic models of plates, *Computational Mechanics*, **20**, 285–294, 1997.
64. C. A. Felippa, K. C. Park and M. R. Justino Filho, The construction of free-free flexibility matrices as generalized stiffness inverses, *Computers & Structures*, **88**, 411–418, 1997.
65. C. A. Felippa and K. C. Park, A direct flexibility method, *Comp. Meth. Appl. Mech. Engrg.*, **149**, 319–337, 1997.
66. K. C. Park, M. R. Justino Filho and C. A. Felippa, An algebraically partitioned FETI method for parallel structural analysis: algorithm description, *Int. J. Numer. Meth. Engrg.*, **40**, 2717–2737, 1997.
67. M. R. Justino Filho, K. C. Park, and C. A. Felippa, An algebraically partitioned FETI method for parallel structural analysis: implementation and numerical performance evaluation, *Int. J. Numer. Meth. Engrg.*, **40**, 2739–2758, 1997.
68. C. A. Felippa, Selected applications of massively parallel processors in computational mechanics, *Advances in Computational Mechanics*, ICES Publications, Atlanta, GA, 614–620, 1997.
69. C. A. Felippa, Recent progress in parametrized variational principles for mechanics, *Comput. Mech.*, **11**, 443–461, 1996.
70. C. A. Felippa, Unificacion parametrica del analisis estructural: formulacion clásica y elementos mixtos d-conectados, *Revista Internacional de Metodos Numericos en Ingenieria*, **12**, 371–410, 1996.
71. U. Gumaste and C. A. Felippa, 3D analysis of fluid-structure interaction phenomena in aircraft engines, Proceedings Fourth US National Congress in Computational Mechanics, San Francisco, CA USACM Press, p. 235, 1997.
72. K. C. Park and C. A. Felippa, A variational framework for methods developents in structural mechanics, Proceedings Fourth US National Congress in Computational Mechanics, San Francisco, CA August 1997, USACM Press, p. 465
73. B. Haugen and C. A. Felippa, A unified formulation of co-rotational finite elements: I. Theory, II. Applications, CAS Report, August 1995.
74. C. A. Felippa, Parametrized unification of matrix structural analysis: classical formulation and d-connected mixed elements, *Finite Elem. Anal. Design*, **21**, 45–74, 1995.
75. C. A. Felippa, B. Haugen and C. Militello, From the individual element test to finite element templates: evolution of the patch test, *Int. J. Numer. Meth. Engrg.*, **38**, 199–229, 1995.
76. C. A. Felippa, L. A. Crivelli and B. Haugen, A Survey of the core-congruential formulation for geometrically nonlinear TL finite elements, *Archives of Computational Methods in Engineering*, **1**, 1–48, 1994.
77. C. A. Felippa, C. Farhat and K. C. Park, Research in grand challenge coupled problems in computational mechanics, invited address, *Proc. Third World Congress in Computational Mechanics*, Chiba, Japan, 554–555, 1994.
78. C. A. Felippa, Finite Element Templates: Recent developments and applications to element-level error estimation, invited Keynote Lecture, *Proc. Third World Congress in Computational Mechanics*, Chiba, Japan, 1432–1437, 1994.
79. C. A. Felippa, B. Haugen and C. Militello, Finite element templates, *Proc. Third World Congress in Computational Mechanics*, Chiba, Japan, 1798–1799, 1994.

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