Oscar Lopez-Pamies

Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign
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PERSONAL DATA

Date of Birth: January 20, 1978
Place of Birth: Alicante, Spain

EDUCATION

Ph.D. in Mechanical Engineering & Applied Mechanics, 2006 (GPA 4.00/4.00)
Dissertation: *On the Effective Behavior, Microstructure Evolution, and Macroscopic Stability of Elastomeric Composites*
University of Pennsylvania
École Polytechnique (France)

Master of Science in Mechanical Engineering, 2002 (GPA 4.00/4.00)
Thesis: *Mechanical Behavior of the Polymer Adiprene-L100: Experiments and Modeling*
University of Maryland Baltimore County

Bachelor of Science in Mechanical Engineering, 2001 (GPA 3.85/4.00)
Bachelor of Arts in Mathematics, 2001 (GPA 3.85/4.00)
University of Maryland Baltimore County

LANGUAGES

Fluent in English, French, and Spanish

POSITIONS HELD

August 2015 – present — Associate Professor, CEE Excellence Faculty Fellow
August 2011 – August 2015 — Assistant Professor, CEE Excellence Faculty Fellow
Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign

September 2007 – August 2011 — Assistant Professor
Department of Mechanical Engineering
State University of New York, Stony Brook

January 2007 – August 2007 — Research Scholar
Department of Mechanical Engineering & Applied Mechanics
University of Pennsylvania

September 2006 – September 2007 — Postdoctoral Researcher
Laboratoire de Mécanique des Solides
École Polytechnique (France)

VISITING POSITIONS

June 2015 — Visiting Professor
Department of Mathematics
Pontificia Universidad Católica de Chile (Chile)

January 2011 Visiting Researcher
OCCAM, Mathematical Institute
University of Oxford (UK)

May – June 2013 Visiting Researcher
June – July 2011
July – August 2008
Laboratoire de Mécanique des Solides
École Polytechnique (France)

COURSES TAUGHT

University of Illinois at Urbana-Champaign

CEE 470 Structural Analysis – undergraduate/graduate
CEE 471 Structural Mechanics – graduate
CEE 570 Finite Element Methods – graduate
CEE 597 Theory of Heterogeneous Materials – graduate
CEE 598 Constitutive Modeling of Engineering Materials – graduate

State University of New York, Stony Brook

MEC 316 Mechanical Engineering Laboratory – undergraduate, junior level
MEC 363 Mechanics of Solids – undergraduate, sophomore level
MEC 541 Elasticity – graduate
MEC 543 Constitutive Theory – graduate
MEC 552 Mechanics of Composites – graduate
MEC 696 Homogenization Methods for Heterogeneous Materials – graduate

HONORS & AWARDS

Young Investigator Medal, Society of Engineering Science, 2017

Journal of Applied Mechanics Award, American Society of Mechanical Engineers, 2014

Teacher Ranked as Excellent, University of Illinois at Urbana-Champaign, Spring 2013, 2017

CAREER Award, National Science Foundation, 2011

Young Scientist Prize, European Solid Mechanics Conference, 2009

Thesis Award, École Polytechnique, 2007

Thesis Award Finalist of ParisTech (top 9 among 514 theses), 2007

Inducted into the Athletic Hall of Fame UMBC, 2006

Student-Athlete of the Year, UMBC, 2000

Second Team Academic All American, 2000

First Team Academic All American, 1999

Member of the Math Team, UMBC, 1998 – 2001

PROFESSIONAL SERVICES

Departmental and University Services

University of Illinois at Urbana-Champaign

Engineering – Mathematics liaison committee, 2015

Engineering – Computer Science liaison committee, 2015

Faculty search committee, 2012, 2013, 2014, 2015, 2016

Graduate student recruiting committee, 2011 – present

State University of New York, Stony Brook

Co-director of the Long Island Junior Science and Humanities Symposium, 2009 – 2012

Undergraduate program committee member, 2007 – 2011

Conference Chair

The XV Pan-American Congress of Applied Mechanics, 2015, Champaign, IL

Symposium Organizer

- "*Mechanics and Physics of Soft Materials*" in SES 2018, Madrid, Spain
- "*Mechanics and Physics of Soft Materials*" in USNCTAM 2018, Evanston, IL
- "*Failure and Damage in Soft Materials: From Cavitation to Cracking*" in SES 2017, Boston, MA
- "*Mechanics of Soft and Biological Materials and Flexible Structures*" in SES 2017, Boston, MA
- "*Instabilities in Soft Matter Solids and Structures*" in ASME IMECE 2016, Phoenix, AZ
- "*Mechanics and Physics of Soft Materials*" in SES 2016, College Park, MD
- "*Mechanics of Soft Materials*" in ASME IMECE 2015, Houston, TX
- "*Mechanics and Physics of Soft Materials*" in SES 2015, College Station, TX
- "*Homogenization Methods in Solid Mechanics*" in PANACM 2015, Buenos Aires, Argentina
- "*Mechanics of Soft Materials*" in ASME IMECE 2014, Montreal, Canada
- "*Soft Materials and Structures*" in SES 2014, West Lafayette, IN
- "*Mechanics and Physics of Soft Matter Materials*" in USNCTAM 2014, East Lansing, MI
- "*Instabilities in Solids and Structures*" in USNCTAM 2014, East Lansing, MI
- "*Instabilities in Solids Across Length Scales*" in 11th World Congress on Computational Mechanics 2014, Barcelona, Spain
- "*Mechanics of Soft Materials*" in ASME IMECE 2013, San Diego, CA
- "*Fracture and Instabilities in Soft Materials*" in the 13th International Conference on Fracture 2013, Beijing, China
- "*Geometrical Instabilities in Soft Materials*" in SIAM Mathematical Aspects of Materials Science 2013, Philadelphia, PA
- "*Mechanics and Physics of Soft Matter*" in PACAM 2013, Houston, TX
- "*Instabilities in Solids and Biological Structures*" in ASME IMECE 2012, Houston, TX
- "*Soft Active Materials*" in SES 2012, Atlanta, GA
- "*Multiscale Methods for Constitutive Modeling of Materials*" in PACAM 2012, Port of Spain, Trinidad and Tobago
- "*Mechanics of Soft Materials*" in ASME IMECE 2010, Vancouver, Canada
- "*Instabilities in Solids*" in SES 2010, Ames, IA
- "*Micromechanical Instabilities in Solids*" in SIAM Mathematical Aspects of Materials Science 2010, Philadelphia, PA

- "*Macroscopic Properties and Instabilities in Heterogeneous Materials Systems*" in USNCTAM 2010, State College, PA
- "*Mechanics of Soft Matter and Soft Intelligent Materials*" in ASCE-ASME-SES 2009, Blacksburg, VA
- "*Mechanics of Soft Matter, Biomaterials, and Biological Systems*" in ASME IMECE 2008, Boston, MA

Professional Societies

ASME (American Society of Mechanical Engineers): Member from 2003 to present; Secretary of the Committee of "Mechanics of Soft Materials", 2014; Chair of the Committee of "Mechanics of Soft Materials", 2015

EUROMECH (European Mechanics Society): Member from 2009 to present

SES (Society of Engineering Science): Member from 2007 to present; Director of the SES Board from 2014 to 2016

SIAM (Society for Industrial and Applied Mathematics): Member from 2008 to present

Journal Referee

Acta Biomaterialia; Applied Mechanics Reviews; Biomechanics and Modeling in Mechanobiology; Composites Science and Technology; Computer Methods in Applied Mechanics and Engineering; Comptes Rendus Mécanique; Continuum Mechanics and Thermodynamics; European Journal of Mechanics A/Solids; Extreme Mechanics Letters; International Journal of Fracture; International Journal of Non-Linear Mechanics; International Journal of Solids and Structures; Journal of the Acoustical Society of America; Journal of Applied Mechanics; Journal of Applied Physics; Journal of Composite Materials; Journal of Computational and Applied Mathematics; Journal of Elasticity; Journal of Engineering Mathematics; Journal of Engineering Materials and Technology; Journal of Materials Research; Journal of Mathematical Analysis and Applications; Journal of Mechanics of Materials and Structures; Journal of the Mechanics and Physics of Solids; Journal of Physics D: Applied Physics; Journal of Physics: Condensed Matter; Mathematical Problems in Engineering; Meccanica; Mechanics of Materials; Mechanics Research Communications; Modelling and Simulation in Materials Science and Engineering; Proceedings of the Royal Society A; Physical Chemistry Chemical Physics; Science China Mathematics; Smart Materials and Structures

PUBLICATIONS

Publications in Refereed Journals

J54. **Kumar, A., Francfort, G.A., Lopez-Pamies, O.** 2018. Fracture and healing of elastomers: A phase-transition theory and numerical implementation. *Journal of the Mechanics and Physics of Solids.* In press.

J53. **Francfort, G.A., Giacomini, A., Lopez-Pamies, O.** 2017. A first step towards a variational view of cavitation. *Submitted.*

J52. **Lefèvre, V., Danas, K., Lopez-Pamies, O.** 2017. A general result for the magnetoelastic response of isotropic suspensions of iron and ferrofluid particles in rubber, with applications to spherical and cylindrical specimens. *Journal of the Mechanics and Physics of Solids* 107, 343–364.

J51. **Lefèvre, V., Lopez-Pamies, O.** 2017. Homogenization of elastic dielectric composites with rapidly oscillating passive and active source terms. *SIAM Journal on Applied Mathematics* 77, 1962–1988.

J50. **Poulain, X., Lefèvre, V., Lopez-Pamies, O., Ravi-Chandar, K.** 2017. Damage in elastomers: Nucleation and growth of cavities, micro-cracks, and macro-cracks. *International Journal of Fracture* 205, 1–21.

J49. **Kumar, A., Aranda-Iglesias, D., Lopez-Pamies, O.** 2017. Some remarks on the effects of inertia and viscous dissipation in the onset of cavitation in rubber. *Journal of Elasticity* 126, 201–213.

J48. **Lefèvre, V., Lopez-Pamies, O.** 2017. Nonlinear electroelastic deformations of dielectric elastomer composites: II — Non-Gaussian elastic dielectrics. *Journal of the Mechanics and Physics of Solids* 99, 438–470.

J47. **Lefèvre, V., Lopez-Pamies, O.** 2017. Nonlinear electroelastic deformations of dielectric elastomer composites: I — Ideal elastic dielectrics. *Journal of the Mechanics and Physics of Solids* 99, 409–437.

J46. **Kumar, A., Lopez-Pamies, O.** 2016. On the two-potential constitutive modelling of rubber viscoelastic materials. *Comptes Rendus Mecanique* 344, 102–112.

J45. **Chi, H., Talischi, C., Lopez-Pamies, O., Paulino, G.H.** 2016. A paradigm for higher-order polygonal elements in finite elasticity using a gradient correction scheme. *Computer Methods in Applied Mechanics and Engineering* 306, 216–251.

J44. **Chi, H., Lopez-Pamies, O., Paulino, G.H.** 2016. A variational formulation with rigid-body constraints for finite elasticity: Theory, finite element implementation, and applications. *Computational Mechanics* 57, 325–338.

J43. **Lefèvre, V., Lopez-Pamies, O.** 2015. The overall elastic dielectric properties of fiber-strengthened/weakened elastomers. *Journal of Applied Mechanics* 82, 111009.

J42. **Spinelli, S.A., Lefèvre, V., Lopez-Pamies, O.** 2015. Dielectric elastomer composites: A general closed-form solution in the small-deformation limit. *Journal of the Mechanics and Physics of Solids* 83, 263–284.

J41. **Goudarzi, T., Spring, D.W., Paulino, G.H., Lopez-Pamies, O.** 2015. Filled elastomers: A theory of filler reinforcement based on hydrodynamic and interphasial effects. *Journal of the Mechanics and Physics of Solids* 80, 37–67.

J40. **Chi, H., Talischi, C., Lopez-Pamies, O., Paulino, G.H.** 2015. Polygonal finite elements for finite elasticity. *International Journal for Numerical Methods in Engineering* 101, 305–328.

J39. **Spinelli, S.A., Lopez-Pamies, O.** 2015. Some simple explicit results for the elastic dielectric properties and stability of layered composites. *International Journal of Engineering Science* 88, 15–28.

J38. **Lefèvre, V., Ravi-Chandar, K., Lopez-Pamies, O.** 2015. Cavitation in rubber: An elastic instability or a fracture phenomenon?. *International Journal of Fracture* 192, 1–23.

J37. **Lefèvre, V., Lopez-Pamies, O.** 2014. The overall elastic dielectric properties of a suspension of spherical particles in rubber: An exact explicit solution in the small-deformation limit. *Journal of Applied Physics* 116, 134106.

J36. **Lopez-Pamies, O., Goudarzi, T., Meddeb, A.B., Ounaies, Z.** 2014. Extreme enhancement and reduction of the dielectric response of polymer nanoparticulate composites via interphasial charges. *Applied Physics Letters* 104, 242904.

J35. **Spinelli, S.A., Lopez-Pamies, O.** 2014. A general closed-form solution for the overall response of piezoelectric composites with random and periodic particulate microstructures. *International Journal of Solids and Structures* 51, 2979–2989.

J34. **Lopez-Pamies, O.** 2014. Elastic dielectric composites: Theory and application to particle-filled ideal dielectrics. *Journal of the Mechanics and Physics of Solids* 64, 61–82.

J33. **Goudarzi, T., Lopez-Pamies, O.** 2013. Numerical modeling of the nonlinear elastic response of filled elastomers via composite-sphere assemblages. *Journal of Applied Mechanics* 80, 050906.

J32. **Lopez-Pamies, O., Goudarzi, T., Danas, K.** 2013. The nonlinear elastic response of suspensions of rigid inclusions in rubber: II — A simple explicit approximation for finite-concentration suspensions. *Journal of the Mechanics and Physics of Solids* 61, 19–37.

J31. **Lopez-Pamies, O., Goudarzi, T., Nakamura, T.** 2013. The nonlinear elastic response of suspensions of rigid inclusions in rubber: I — An exact result for dilute suspensions. *Journal of the Mechanics and Physics of Solids* 61, 1–18.

J30. **Lopez-Pamies, O., Ponte Castañeda, P., Idiart, M.I.** 2012. Effects of internal pore pressure on closed-cell elastomeric foams. *International Journal of Solids and Structures* 49, 2793–2798.

J29. **Bertoldi, K., Lopez-Pamies, O.** 2012. Some remarks on the effect of interphases on the mechanical response and stability of fiber-reinforced elastomers. *Journal of Applied Mechanics* 79, 031023.

J28. **Idiart, M.I., Lopez-Pamies, O.** 2012. On the overall response of elastomeric solids with pressurized cavities. *Comptes Rendus Mecanique* 340, 359–368.

J27. **Nakamura, T., Lopez-Pamies, O.** 2012. A finite element approach to study cavitation instabilities in nonlinear elastic solids under general loading conditions. *International Journal of Non-Linear Mechanics* 47, 331–340.

J26. **Lopez-Pamies, O., Moraleda, J., Segurado, J., Llorca, J.** 2012. On the extremal properties of Hashin's hollow cylinder assemblage in nonlinear elasticity. *Journal of Elasticity* 107, 1–10.

J25. **Lopez-Pamies, O., Nakamura, T., Idiart, M.I.** 2011. Cavitation in elastomeric solids: II — Onset-of-cavitation surfaces for Neo-Hookean materials. *Journal of the Mechanics and Physics of Solids* 59, 1488–1505.

J24. **Lopez-Pamies, O., Idiart, M.I., Nakamura, T.** 2011. Cavitation in elastomeric solids: I — A defect-growth theory. *Journal of the Mechanics and Physics of Solids* 59, 1464–1487.

J23. **Lopez-Pamies, O., Idiart, M.I., Li, Z.** 2011. On microstructure evolution in fiber-reinforced elastomers and implications for their mechanical response and stability. *Journal of Engineering Materials and Technology* 133, 011007.

J22. **Michel, J.C., Lopez-Pamies, O., Ponte Castañeda, P., Triantafyllidis, N.** 2010. Microscopic and macroscopic instabilities in finitely strained fiber-reinforced elastomers. *Journal of the Mechanics and Physics of Solids* 58, 1776–1803.

J21. **Lopez-Pamies, O., Idiart, M.I.** 2010. Fiber-reinforced hyperelastic solids: A realizable homogenization constitutive theory. *Journal of Engineering Mathematics* 68, 57–83.

J20. **Lopez-Pamies, O**. 2010. A new I_1-based hyperelastic model for rubber elastic materials. *Comptes Rendus Mecanique* 338, 3–11.

J19. **Racherla, V., Lopez-Pamies, O., Ponte Castañeda, P.** 2010. Macroscopic response and onset of instabilities in lamellar nanostructured elastomers with "oriented" and "unoriented" polydomain microstructures. *Mechanics of Materials* 42, 451–468.

J18. **Lopez-Pamies, O**. 2010. An exact result for the macroscopic response of particle-reinforced Neo-Hookean solids. *Journal of Applied Mechanics* 77, 021016.

J17. **Lopez-Pamies, O., Idiart, M.I.** 2009. An exact result for the macroscopic behavior of porous Neo-Hookean solids. *Journal of Elasticity* 95, 99–105.

J16. **Lopez-Pamies, O**. 2009. Onset of cavitation in compressible, isotropic, hyperelastic solids. *Journal of Elasticity* 94, 115–145.

J15. **Agoras, M., Lopez-Pamies, O., Ponte Castañeda, P.** 2009. Onset of macroscopic instabilities in fiber-reinforced nonlinearly elastic materials. *Journal of the Mechanics and Physics of Solids* 57, 1828–1850.

J14. **Agoras, M., Lopez-Pamies, O., Ponte Castañeda, P.** 2009. A general hyperelastic model for incompressible fiber-reinforced elastomers. *Journal of the Mechanics and Physics of Solids* 57, 268–286.

J13. **Lopez-Pamies, O., Ponte Castañeda, P.** 2009. Microstructure evolution in hyperelastic laminates and implications for overall behavior and macroscopic stability. *Mechanics of Materials* 41, 364–374.

J12. **Lopez-Pamies, O., Garcia, R., Chabert, E., Cavaillé, J.-Y., Ponte Castañeda, P**. 2008. Multiscale modeling of oriented thermoplastic elastomers with lamellar morphology. *Journal of the Mechanics and Physics of Solids* 56, 3206–3223.

J11. **Lopez-Pamies, O., Ponte Castañeda, P.** 2007. Homogenization-based constitutive models for porous elastomers and implications for macroscopic instabilities: II — Results. *Journal of the Mechanics and Physics of Solids* 55, 1702–1728.

J10. **Lopez-Pamies, O., Ponte Castañeda, P.** 2007. Homogenization-based constitutive models for porous elastomers and implications for macroscopic instabilities: I — Analysis. *Journal of the Mechanics and Physics of Solids* 55, 1677–1701.

J9. **Brun, M., Lopez-Pamies, O., Ponte Castañeda, P.** 2007. Homogenization estimates for fiber-reinforced elastomers with periodic microstructures. *International Journal of Solids and Structures* 44, 5953–5979.

J8. **Michel, J.C., Lopez-Pamies, O., Ponte Castañeda, P., Triantafyllidis, N.** 2007. Microscopic and macroscopic instabilities in finitely strained porous elastomers. *Journal of the Mechanics and Physics of Solids* 55, 900–938.

J7. **Lopez-Pamies, O., Ponte Castañeda, P.** 2006. On the overall behavior, microstructure evolution, and macroscopic stability in reinforced rubbers at large deformations: II — Application to cylindrical fibers. *Journal of the Mechanics and Physics of Solids* 54, 831–863.

J6. **Lopez-Pamies, O., Ponte Castañeda, P.** 2006. On the overall behavior, microstructure evolution, and macroscopic stability in reinforced rubbers at large deformations: I — Theory. *Journal of the Mechanics and Physics of Solids* 54, 807–830.

J5. **Khan, A.S., Lopez-Pamies, O., Kazmi, R.** 2006. Thermo-mechanical large deformation response and constitutive modeling of viscoelastic polymers over a wide range of strain rates and temperatures. *International Journal of Plasticity* 22, 581–601.

J4. **Lopez-Pamies, O., Ponte Castañeda, P.** 2004. Second-order estimates for the macroscopic response and loss of ellipticity of porous rubbers at large deformations. *Journal of Elasticity* 76, 247–287.

J3. **Lopez-Pamies, O., Ponte Castañeda, P.** 2004. Second-order homogenization estimates incorporating field fluctuations in finite elasticity. *Mathematics and Mechanics of Solids* 9, 243–270.

J2. **Lopez-Pamies, O., Ponte Castañeda, P.** 2004. Second-order estimates for the large-deformation response of particle-reinforced rubbers. *Comptes Rendus Mecanique* 331, 1–8.

J1. **Khan, A.S., Lopez-Pamies, O.** 2002. Time and temperature dependent response and relaxation of a soft polymer. *International Journal of Plasticity* 18, 1359–1372.

Publications in Conference Proceedings and Newsletters

N1. **Lopez-Pamies, O.** 2014. Cavitation in rubber: The role of elasticity. *EUROMECH Newsletter* 45.

P4. **Lopez-Pamies, O., Nakamura, T.** 2010. Analytical and numerical solutions for the onset of cavitation in rubber under unequal stresses. *Proceedings of the 2010 M&M International Symposium for Young Researchers*, California Institute of Technology, Pasadena, CA.

P3. **Idiart, M.I., Lopez-Pamies, O.** 2009. A realizable constitutive model for fiber-reinforced Neo-Hookean solids. *XVIII Congreso sobre Métodos Numéricos y sus Aplicaciones ENIEF 2009*, Tandil, Argentina.

P2. **Lopez-Pamies, O., Khan, A.S.** 2002. Three-dimensional, finite deformation, constitutive model for predominantly viscoelastic soft polymers. *Proceedings of Plasticity '02: The Ninth International Symposium on Plasticity and Its Current Applications*, Aruba, 144–146.

P1. **Lopez-Pamies, O., Khan, A.S.** 2000. Relaxation and mechanical response to strain rate and temperature of the polymer Adiprene-L100. *Proceedings of Plasticity '00: The Eighth International Symposium on Plasticity and Its Current Applications*, Whistler, Canada, 588a-588c.

Book Chapters

B1. **Paulino, G.H., Chi., H, Talischi, C., Lopez-Pamies, O.** 2017. Extremely Large Deformations with Polygonal and Polyhedral Elements. In: K. Hormann and N. Sukumar (eds.) *Generalized Barycentric Coordinates in Computer Graphics and Computational Mechanics*. CRC Press, pp. 197–228. ISBN 9781498763592.

DOCTORAL STUDENTS

Kamalendu Ghosh, Ph.D. 2020 (expected). Thesis title: "Electromechanics of Soft Dielectrics Containing Space Charges: Theory and Applications"

Bhavesh Shrimali, Ph.D. 2020 (expected). Thesis title: "Iterative and Variational Homogenization Methods for Highly Deformable Dissipative Solids"

Aditya Kumar, Ph.D. 2019 (expected). Thesis title: "Nucleation and Propagation of Fracture and Healing in Elastomers"

Victor Lefèvre, Ph.D. 2017. Thesis title: "Dielectric Elastomer Composites: Analytical and Numerical Non-Convex Homogenization Methods and Applications". Currently: *Hibbitt Fellow, Brown University*.

Taha Goudarzi, Ph.D. 2014. Thesis title: "Iterative and Variational Homogenization Methods for Particle-Filled Elastomers". Currently: *Assistant Professor, Department of Mechanical Engineering, Amirkabir University of Technology*.

MASTERS STUDENTS

Aditya Kumar, M.S. 2016. Thesis title: "On the Two-Potential Constitutive Modelling of Rubber Viscoelastic Materials"

Alvaro D. Garnica, M.S. 2016. Thesis title: "A WENO Finite-Difference Scheme for a New Class of Hamilton-Jacobi Equations in Nonlinear Electroelastostatics"

Heng Chi, M.S. 2014. Thesis title: "Polygonal Finite Elements for Finite Elasticity" (co-advised by Prof. G.H. Paulino)

Stephen A. Spinelli, M.S. 2014. Thesis title: "Some Simple Explicit Results for the Elastic Dielectric Properties and Stability of Layered Composites"

Sumantu Iyer, M.S. 2010. Thesis title: "Overall Properties of Piezoelectric Particulate Composites: Homogenization Estimates and Finite-Element Simulations"

Zhiyun Li, M.S. 2010. Thesis title: "On Microstructure Evolution in Fiber-Reinforced Elastomers and Implications for Their Mechanical Response and Stability"

Yu Chen, M.S. 2010. Thesis title: "Cavitation Phenomena in Hyperelastic Solids: A Finite-Element Approach"

VISITING STUDENTS

Guillaume D'Hondt, Ecole Polytechnique (France), Spring 2017. Project title: "Nonlinear electroelastic deformations of electrets".

Olivier Massicot, Ecole Polytechnique (France), Spring 2016. Project title: "Finite viscoelastic deformations of porous elastomers".

Francisco Damian Aranda Iglesias, Universidad Carlos III de Madrid (Spain), Fall 2015. Project title: "Dynamic cavitation in elastic solids".

Mohamed Ladeb, Ecole Polytechnique (France), Spring 2015. Project title: "Extreme enhancement and reduction of the time-dependent dielectric response of polymer nanoparticulate composites via interphasial charges". Awarded with the Research Internship Award of Ecole Polytechnique 2015.

Victor Lefèvre, Ecole Polytechnique (France), Spring 2012. Project title: "Cavitation in rubber: An elastic instability or a fracture phenomenon?". Awarded with the PSA André Citroën Award of Ecole Polytechnique 2012.

GRANTS & FELLOWSHIPS

G11. "Innatam: Low Voltage, Flexible, Polymer Actuators". PI: C. Evans, Co-PIs: P. Braun, O. Lopez-Pamies. Period: June 2017 – June 2018. Funded by Facebook.

G10. "Extreme Enhancement of the Electromechanical Properties of Soft Nano-Particulate Composites via Interphases". PI: O. Lopez-Pamies, Co-PI: Z. Ounaies. Period: May 2017 – April 2020. Funded by NSF/CMMI – Mechanics of Materials and Structures. Award Number: CMMI–1661853.

G9. "Fracture in Soft Organic Solids — The Variational View". PI: O. Lopez-Pamies, Co-PIs: G.A. Francfort, Michael J. Shelley. Period: August 2016 – July 2019. Funded by NSF/DMS – Applied Mathematics. Award Number: DMS–1615661.

G8. "Conference Support for Fifteenth Pan-American Congress of Applied Mechanics (PACAM XV); Champaign, IL, May 18–21, 2015". PI: O. Lopez-Pamies. Funded by the Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign.

G7. "Polygonal and Polyhedral Elements as a New Computational Paradigm to Study Soft Materials". PI: G.H. Paulino, Co-PI: O. Lopez-Pamies. Period: September 2014 – February 2017. Funded by NSF/CMMI – Mechanics of Materials. Award Number: CMMI–1437535.

G6. "EAGER: Processing and Characterization of Soft Active Nanoparticulate Composites". PI: O. Lopez-Pamies, Co-PIs: I. Chasiotis, K. Dayal , Z. Ounaies. Period: September 2013 – February 2015. Funded by NSF/CMMI – Design of Engineering Material Systems. Award Number: CMMI–1349535.

G5. "Damage in Soft Solids: Elasticity vs. Fracture". PI: O. Lopez-Pamies, Co-PI: K. Ravi-Chandar. Period: September 2012 – August 2016. Funded by NSF/CMMI – Mechanics of Materials. Award Number: CMMI–1235352.

G4. "Bottom-Up Design of Soft Electroactive Materials". PI: O. Lopez-Pamies, Co-PI: G.H. Paulino. Period: August 2012 – August 2013. Funded by CEE Innovation Grants Program, University of Illinois at Urbana-Champaign.

G3. "A Novel Class of Hamilton-Jacobi Equations to Investigate the Initiation and Propagation of Damage in Soft Solids". PI: O. Lopez-Pamies, Co-PI: R.S. Laugesen. Period: August 2012 – August 2013. Initiative for Mathematical Sciences and Engineering, University of Illinois at Urbana-Champaign.

G2. "CAREER: Novel Homogenization Approaches to Study the Electromechanical Behavior and Stability of Soft Electrostrictive Composites". PI: O. Lopez-Pamies. Period: February 2011 – January 2017. Funded by NSF/CMMI – Mechanics of Materials. Award Number: CMMI–1055528.

G1. “Iterative Homogenization Methods to Study Cavitation in Soft Solids”. PI: O. Lopez-Pamies. Period: September 2010 – August 2014. Funded by NSF/DMS – Applied Mathematics. Award Number: DMS–1009503.

PRESENTATIONS

Seminars, Plenary and Keynote Lectures

S41. ‘A general result for the magnetoelastic response of isotropic suspensions of iron and ferrofluid particles in rubber, with applications to spherical and cylindrical specimens’, 10th European Solid Mechanics Conference, Bologna, Italy, July 2018 (planned).

S40. ‘Fracture and healing of elastomers: A phase-transition theory and numerical implementation’, Mathematics and Mechanics: Natural Philosophy in the 21st Century, University of Oxford, UK, June 2018 (planned).

S39. ‘On two novel computational homogenization frameworks in 3D nonlinear electroselastostatics and application to dielectric elastomer composites’, XXIII Congreso de Metodos Numericos y sus Aplicaciones, La Plata, Argentina, November 2017.

S38. ‘Fracture and healing of elastomers: A phase transition theory and numerical implementation’, Mechanical & Nuclear Engineering Department, The Pennsylvania State University, State College, October 2017.

S37. ‘Fracture and healing of elastomers: A phase transition theory and numerical implementation’, Laboratoire de Mécanique des Solides, École Polytechnique, Palaiseau, France, September 2017.

S36. ‘Fracture and healing of elastomers: Theory and numerical implementation’, SES 2017 Young Investigator Lecture, Boston, July 2017.

S35. ‘The cautionary tale of cavitation and fracture in rubber: Francfort’s conspicuous role’, From Solid Mechanics to Mathematical Analysis: A workshop on the occasion of Gilles Francfort's 60th birthday, Paris, France, June 2017.

S34. ‘A WENO finite-difference scheme for a new class of Hamilton-Jacobi equations in nonlinear solid mechanics’, Computational Science and Engineering Lecture Series, University of Illinois at Urbana-Champaign, Urbana, March 2017.

S33. ‘Damage in elastomers: From cavitation, to micro-cracks, to macro-cracks’, Pierson Graduate Lecture Series, Department of Mechanical and Materials Engineering, University of Nebraska, Lincoln, November 2016.

S32. ‘Understanding and designing soft solids from the bottom up: Methods and applications’, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, October 2015.

S31. ‘Cavitation in rubber: An elastic instability or a fracture phenomenon?’, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, September 2014.

S30. ‘Towards a microscopic theory of macroscopic damage in elastomers’, Departamento de Mecánica de Medios Continuos y Teoría de Estructuras, Universidad Carlos III, Madrid, July 2014.

S29. ‘Iterative and variational methods for non-convex homogenization problems’, Department of Mechanical Engineering, University of Houston, Houston, April 2014.

S28. ‘Elastic dielectric composites: A microscopic field theory and applications’, Department of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, September 2013.

S27. ‘Cavitation in rubber: An elastic instability or a fracture phenomenon?’, Department of Aerospace, California Institute of Technology, Pasadena, January 2013.

S26. ‘Cavitation in rubber: An elastic instability or a fracture phenomenon?’, Department of Mechanical Engineering, Stanford University, Stanford, December 2012.

S25. ‘Cavitation in rubber: An elastic instability or a fracture phenomenon?’, Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, Austin, November 2012.

S24. ‘Cavitation instabilities in nonlinear elastic solids: a defect-growth formulation based on iterated homogenization’, Harmonic Analysis and Differential Equations Seminar Series, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, April 2012.

S23. ‘Response of elastomeric solids with pressurized cavities: from defects to closed-cell foams’, Department of Mechanical Science & Engineering, University of Illinois at Urbana-Champaign, Urbana, January 2012.

S22. ‘Soft solids: Microscopic theories for their analysis and bottom-up design’, Department of Mechanical Engineering & Materials Science, Duke University, Durham, October 2011.

S21. ‘Defects and Microstructures in Soft Solids’, Structures Engineering Seminar Series, University of Illinois at Urbana-Champaign, Urbana, September 2011.

S20. ‘Soft solids: Microscopic theories for their analysis and bottom-up design’, Department of Civil & Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, April 2011.

S19. ‘Cavitation instabilities in soft solids: A defect-growth theory and applications to elastomers’, School of Engineering & Applied Science, Harvard University, Cambridge, April 2011.

S18. ‘Cavitation in elastomeric solids: A defect-growth theory’, Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, April 2011.

S17. ‘Soft solids: microscopic theories for their analysis and bottom-up design’, Sibley School of Mechanical & Aerospace Engineering, Cornell University, Ithaca, March 2011.

S16. ‘Cavitation in elastomeric solids: A defect-growth theory’, OCCAM, Mathematical Institute, University of Oxford, Oxford, UK, January 2011.

S15. ‘Analytical and numerical solutions for the onset of cavitation in rubber under unequal stresses’, Department of Mechanical Engineering, University of Maryland Baltimore County, Baltimore, October 2010.

S14. ‘Cavitation in elastomeric solids’, Laboratoire de Mécanique des Solides, École Polytechnique, Palaiseau, France, May 2010.

S13. ‘Fiber-reinforced elastomers: macroscopic properties, microstructure evolution, and stability’, Department of Aerospace Engineering, Iowa State University, Ames, February 2010.

S12. ‘Onset of cavitation in hyperelastic solids under arbitrary loading conditions’, Departamento de Ciencia de Materiales, Universidad Politecnica de Madrid, Madrid, Spain, July 2009.

S11. ‘Soft heterogeneous materials: macroscopic properties, microstructure evolution, and instabilities’, Mechanical Engineering Department, Johns Hopkins University, Baltimore, April 2009.

S10. ‘Onset of cavitation in hyperelastic solids under arbitrary loading conditions’, Aerospace Engineering & Mechanics, University of Minnesota, Twin Cities, February 2009.

S9. ‘Onset of cavitation in compressible, isotropic, hyperelastic solids’, Engineering Department, University of Cambridge, Cambridge, UK, December 2008.

S8. ‘Polymeric materials: Overall behavior, microstructure evolution, and stability’, Mechanical Engineering, State University of New York at Stony Brook, Stony Brook, May 2007.

S7. ‘Polymeric materials: Overall behavior, microstructure evolution, and stability’, Division of Engineering, Brown University, Providence, March 2007.

S6. ‘Polymeric materials: Overall behavior, microstructure evolution, and stability’, Mechanical & Aerospace Engineering, University of California San Diego, La Jolla, March 2007.

S5. ‘Effective behavior, microstructural evolution, and macroscopic stability in polymeric composites’, Mechanical & Industrial Engineering, University of Illinois at Urbana-Champaign, Urbana, May 2006.

S4. ‘Effective behavior, microstructural evolution, and macroscopic stability in polymeric composites’, Mechanical Engineering & Applied Mechanics, University of Pennsylvania, Philadelphia, April 2006.

S3. ‘Effective behavior, microstructural evolution, and macroscopic stability in polymeric composites’, Aerospace Engineering, University of Michigan, Ann Arbor, March 2006.

S2. ‘On the overall behavior, microstructure evolution, and macroscopic stability in elastomeric composites at large deformations’, Laboratoire de Mécanique des Solides, École Polytechnique, Palaiseau, France, October 2005.

S1. ‘Microscopic and macroscopic instabilities in finitely deformed laminates’, Graduate Research Seminar, École Polytechnique, Palaiseau, France, October 2005.

Conferences and Workshops

C94. ‘Nucleation and propagation of fracture and healing in elastomers: A phase-transition theory & numerical implementation’, 13th World Congress in Computational Mechanics, New York, July 2018 (planned).

C93. ‘Nucleation and propagation of fracture and healing in elastomers: A phase-transition theory & numerical implementation’, 6th European Conference on Computational Mechanics, Glasgow, UK, June 2018 (planned).

C92. ‘Homogenization of elastic dielectric composites containing space charges’, 16th European Mechanics of Materials Conference, Nantes, France, March 2018 (planned).

C91. ‘Fracture and healing of elastomers: The variational view and numerical implementation’, 14th International Conference on Fracture, Rhodes, Greece, June 2017.

C90. ‘A WENO finite-difference scheme for a new class of Hamilton-Jacobi equations in nonlinear solid mechanics’, EMI International Conference 2017, Rio de Janeiro, Brazil, March 2017.

C89. ‘The two-potential constitutive framework for finite viscoelasticity: Theoretical aspects and application to elastomers’, ASME IMECE 2016, Phoenix, November 2016.

C88. ‘An approximate closed-form homogenization solution for the elastic dielectric response of dielectric elastomer composites’, ASME IMECE 2016, Phoenix, November 2016.

C87. ‘The two-potential constitutive framework for finite viscoelasticity: Theoretical aspects and application to elastomers’, SES 2016, College Park, October 2016.

C86. ‘An approximate closed-form homogenization solution for the elastic dielectric response of dielectric elastomer composites’, SES 2016, College Park, October 2016.

C85. ‘Nonlinear electroelastic deformations of dielectric elastomer composites’, ICTAM 2016, Montreal, Canada, August 2016.

C84. ‘A WENO finite-difference scheme for a new class of Hamilton-Jacobi equations in nonlinear electroelastostatics’, Young Researcher Symposium of the Mechanics and Materials Division of the Japan Society of Mechanical Engineers, Stony Brook, August 2016.

C83. ‘The two-potential constitutive framework for rubber viscoelasticity’, The 10th International Conference on Mechanics of Time Dependent Materials, Paris, France, May 2016.

C82. ‘Hamilton-Jacobi and Eikonal pdes from iterated homogenization methods in finite elasticity’, SIAM Conference on Analysis of PDEs 2015, Scottsdale, December 2015.

C81. ‘Filled elastomers: A theory of filler reinforcement based on hydrodynamic and interphasial effects’, ASME IMECE 2015, Houston, November 2015.

C80. ‘Cavitation in rubber: The roles of limiting chain extensibility, fracture, and viscoelasticity’, ASME IMECE 2015, Houston, November 2015.

C79. ‘Cavitation in rubber: An elastic instability or a fracture phenomenon?’, PACAM XV, Champaign, May 2015.

C78. ‘Some simple explicit results for the elastic dielectric properties and stability of layered composites’, ASME IMECE 2014, Montreal, Canada, November 2014.

C77. ‘Cavitation in Rubber: An Elastic Instability or a Fracture Phenomenon?’, ASME IMECE 2014, Montreal, Canada, November 2014.

C76. ‘Dielectric elastomer composites: The critical role of interphasial phenomena’, ASME IMECE 2014, Montreal, Canada, November 2014.

C75. ‘Dielectric elastomer composites: The critical role of interphasial phenomena’, SES 2014, West Lafayette, October 2014.

C74. ‘The nonlinear elastic response of suspensions of rigid inclusions in rubber’, 11th World Congress on Computational Mechanics, Barcelona, Spain, July 2014.

C73. ‘Dielectric elastomer composites: A general closed-form solution in the small-deformation limit’, IUTAM Symposium on Thermomechanical-Electromagnetic Coupling in Solids, Paris, France, June 2014.

C72. ‘Elastic dielectric composites: Theory and application to particle-filled ideal dielectrics’, IUTAM Symposium on Mechanics of Soft Active Materials, Haifa, Israel, May 2014.

C71. ‘Elastic dielectric composites: Theory and application to particle-filled ideal dielectrics’, SPIE Smart Structures, San Diego, March 2014.

C70. ‘Elastic dielectric composites: Theory and application to particle-filled ideal dielectrics’, ASME IMECE 2013, San Diego, November 2013.

C69. ‘Numerical modeling of the nonlinear elastic response of filled elastomers via composite-sphere assemblages’, ASME IMECE 2013, San Diego, November 2013.

C68. ‘Closed-form solutions for the overall response of piezoelectric composites with random and periodic particulate microstructures’, ASME IMECE 2013, San Diego, November 2013.

C67. ‘The nonlinear elastic response of suspensions of rigid inclusions in rubber’, Advances in Applied Mathematics and Mechanics Workshop, University of Manchester, Manchester, UK, June 2013.

C66. ‘The nonlinear elastic response of suspensions of rigid inclusions in rubber’, SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, June 2013.

C65. ‘Cavitation in rubber: An elastic instability or a fracture phenomenon?’, SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, June 2013.

C64. ‘Closed-form solutions for the overall response of piezoelectric composites with random and periodic particulate microstructures’, 13th Pan American Congress of Applied Mechanics, Houston, May 2013.

C63. ‘Numerical modeling of the nonlinear elastic response of filled elastomers via composite-sphere assemblages’, 13th Pan American Congress of Applied Mechanics, Houston, May 2013.

C62. ‘Elastic dielectric composites: Theory and application to particle-filled ideal dielectrics’, 13th Pan American Congress of Applied Mechanics, Houston, May 2013.

C61. ‘Soft dielectric composites: A homogenization theory for their analysis and bottom-up design’, 11eme Colloque National en Calcul des Structures, Giens, France, May 2013.

C60. ‘Elastomeric solids with pressurized cavities: From defects to closed-cell foams’, ASME IMECE 2012, Houston, November 2012.

C59. ‘Some remarks on the effect of interphases on the mechanical response and stability of fiber-reinforced elastomers’, ASME IMECE 2012, Houston, November 2012.

C58. ‘The nonlinear elastic response of suspensions of rigid in rubber’, ASME IMECE 2012, Houston, November 2012.

C57. ‘Soft dielectric composites: A novel homogenization method for their analysis and bottom-up design’, SES 2012, Atlanta, October 2012.

C56. ‘The nonlinear elastic response of suspensions of rigid inclusions in rubber’, SES 2012, Atlanta, October 2012.

C55. ‘The nonlinear elastic response of suspensions of rigid inclusions in rubber’, International Workshop on Mathematical and Mechanical Modelling for Materials, Hong Kong, August 2012.

C54. ‘Microscopic and macroscopic instabilities in particle-reinforced elastomers’, ICTAM 2012, Beijing, China, August 2012.

C53. ‘Nonlinear iterated homogenization methods in finite deformations’, 12th Pan American Congress of Applied Mechanics, Port of Spain, Trinidad, January 2012.

C52. ‘Cavitation instabilities in soft solids: A defect-growth theory and applications to elastomers’, 12th Pan American Congress of Applied Mechanics, Port of Spain, Trinidad, January 2012.

C51. ‘Defects in Soft Solids’, 50th Year Anniversary of the Laboratoire de Mécanique des Solides, École Polytechnique, Paris, France, December 2011.

C50. ‘Electromechanical behavior of soft electrostrictive composites: A novel microscopic theory for their analysis and bottom-up design’, ASME IMECE 2011, Denver, November 2011.

C49. ‘A new nonlinear elastic model for soft solids’, SES 2011, Evanston, October 2011.

C48. ‘On the effect of interphases on the mechanical response and stability of fiber-reinforced elastomers’, SES 2011, Evanston, October 2011.

C47. ‘Cavitation instabilities in soft solids: A defect-growth theory and applications to elastomers’, Future Directions in Mechanics Research, NSF Workshop and Symposium in Honor of L.B. Freund, Providence, June 2011.

C46. ‘Constitutive response of porous elastomers’, IUTAM Symposium 2011: Mechanics of Liquid and Solid Foams, Austin, May 2011.

C45. ‘Cavitation in elastomeric solids: A defect-growth theory’, Symposium in Honor of Rohan Abeyaratne, 2010 recipient of the Drucker medal, ASME IMECE 2010, Vancouver, Canada, November 2010.

C44. ‘On microstructure evolution in fiber-reinforced elastomers and implications for their mechanical response and stability’, ASME IMECE 2010, Vancouver, Canada, November 2010.

C43. ‘Analytical and numerical solutions for the onset of cavitation in rubber under general loading conditions’, ASME IMECE 2010, Vancouver, Canada, November 2010.

C42. ‘Microscopic and macroscopic instabilities in particle-reinforced elastomers’, SES 2010, Ames, October 2010.

C41. ‘On microstructure evolution in fiber-reinforced elastomers and implications for their mechanical response and stability’, Symposium in Honor of Roger Fosdick, 2010 recipient of the Engineering Science medal, SES 2010, Ames, October 2010.

C40. ‘Analytical and numerical solutions for the onset of cavitation in rubber under general loading conditions’, Symposium in Honor of Ray Ogden, 2010 recipient of the Prager medal, SES 2010, Ames, October 2010.

C39. ‘Cavitation in elastomeric solids: A defect-growth theory’, Symposium in Honor of Nguyen Quoc Son, Institut Henri-Poincare, Paris, France, September 2010.

C38. ‘Failure surfaces for fiber-reinforced elastomers under general 3D loading conditions’, 16th USNCTAM, State College, June 2010.

C37. ‘An iterated homogenization method to study cavitation in hyperelastic solids’, 16th USNCTAM, State College, June 2010.

C36. ‘Thermoplastic elastomers: multiscale modeling, microstructure evolution, and macroscopic instabilities’, 16th USNCTAM, State College, June 2010.

C35. ‘Iterated homogenization methods in finite elasticity and applications’, Workshop on Variational Problems in Solid Mechanics, University of Pennsylvania, Philadelphia, May 2010.

C34. ‘An iterated homogenization method to study cavitation in hyperelastic solids’, SIAM 2010, Philadelphia, May 2010.

C33. ‘Thermoplastic elastomers: multiscale modeling, microstructure evolution and macroscopic instabilities’, IV European Conference in Computational Mechanics, Paris, France, May 2010.

C32. ‘Cavitation in soft solids’, Young Researcher Symposium of the Mechanics and Materials Division of the Japan Society of Mechanical Engineers, California Institute of Technology, Pasadena, March 2010.

C31. ‘Macroscopic instabilities in fiber-reinforced rubbers at finite strain’, ASME IMECE 2009, Orlando, November 2009.

C30. ‘Onset of cavitation in hyperelastic solids under arbitrary 3D loading conditions’, ASME IMECE 2009, Orlando, November 2009.

C29. ‘An exact result for the macroscopic response of porous Neo-Hookean solids’, ASME IMECE 2009, Orlando, November 2009.

C28. ‘Mechanics of near-single-crystal thermoplastic elastomers’, ASME IMECE 2009, Orlando, November 2009.

C27. ‘Onset of cavitation in hyperelastic solids under arbitrary loading conditions’, EUROMECH Solids Mechanics Conference 2009, Lisbon, Portugal, September 2009.

C26. ‘A new constitutive theory for fiber-reinforced rubberlike materials’, ASCE-SES-ASME 2009, Blacksburg, June 2009.

C25. ‘Mechanics of near-single-crystal thermoplastic elastomers’, ASCE-SES-ASME 2009, Blacksburg, June 2009.

C24. ‘Onset of cavitation in hyperelastic solids under arbitrary 3D loading conditions’, ASCE-SES-ASME 2009, Blacksburg, 2009.

C23. ‘An exact result for the macroscopic response of porous Neo-Hookean solids’, ASCE-SES-ASME 2009, Blacksburg, 2009.

C22. ‘A new hyperelastic model for rubber elastic materials’, ASCE-SES-ASME 2009, Blacksburg, June 2009.

C21. ‘Near-single-crystal thermoplastic elastomers: Homogenization-based constitutive modeling and experiments’, ASME IMECE 2008, Boston, November 2008.

C20. ‘Onset of cavitation in compressible, isotropic, hyperelastic solids’, ASME IMECE 2008, Boston, November 2008.

C19. ‘Microstructure evolution in hyperelastic laminates and implications for overall behavior and macroscopic stability’, SES 2008, Urbana-Champaign, October 2008.

C18. ‘Constitutive models for fiber-reinforced rubbers: effective response and macroscopic instabilities’, SES 2008, Urbana-Champaign, October 2008.

C17. ‘Onset of cavitation in compressible, isotropic, hyperelastic solids’, SES 2008, Urbana-Champaign, October 2008.

C16. ‘Onset of cavitation in compressible, isotropic, hyperelastic solids’, ICTAM 2008, Adelaide, Australia, August 2008.

C15. ‘Onset of cavitation in compressible, isotropic, hyperelastic solids’, First American Academy of Mechanics Conference, New Orleans, June 2008.

C14. ‘Onset of cavitation in compressible, isotropic, hyperelastic solids’, SIAM 2008, Philadelphia, May 2008.

C13. ‘Instabilities in lamellar block copolymer films’, ASME IMECE 2007, Seattle, November 2007.

C12. ‘Homogenization estimates and macroscopic instabilities of fiber-reinforced elastomers with periodic microstructures’, ASME IMECE 2007, Seattle, November 2007.

C11. ‘Multiscale modeling of oriented thermoplastic elastomers with lamellar morphology’, SES 2007, College Station, October 2007.

C10. ‘Constitutive models for porous elastomers and implications for macrostability’, SES 2007, College Station, October 2007.

C9. ‘Multiscale modeling of thermoplastic elastomers with lamellar morphology’, International Conference on Thermo-Mechanical Modeling of Solids, Palaiseau, France, July 2007.

C8. ‘Constitutive models for porous elastomers and implications for macro-stability’, International Conference on Thermo-Mechanical Modeling of Solids, Palaiseau, France, July 2007.

C7. ‘Homogenization-based constitutive modeling of fiber-reinforced elastomers’, International Workshop on the Interplay between Mechanics and Biology on Multiple Length Scales, Castro Urdiales, Spain, July 2007.

C6. ‘Effective behavior, microstructure evolution, and macroscopic instabilities in reinforced elastomers’, 15th USNCTAM, Boulder, June 2006.

C5. ‘Homogenization-based constitutive models for fiber-reinforced elastomers and implications for loss of ellipticity’, ASME IMECE 2005, Orlando, November 2005.

C4. ‘Homogenization-based constitutive models for fiber-reinforced elastomers and implications for loss of ellipticity’, Primer Congreso Conjunto de Matematicas RSME-SCM-SEIO-SEMA, Valencia, Spain, February 2005.

C3. ‘Second-order estimates for the mechanical behavior of particle-reinforced elastomers under large deformations’, ASME IMECE 2003, Washington DC, November 2003.

C2. ‘Homogenization estimates for particle-reinforced elastomers’, NSF-CNRS Meeting, Marseille, France, June 2003.

C1. ‘Three-dimensional, finite deformation, constitutive model for predominantly viscoelastic soft polymers’, 9th International Symposium on Plasticity and Its Current Applications, Aruba, January 2002.