Lou Kondic

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APPOINTMENTS

New Jersey Institute of Technology, Distinguished Professor	8/19 - present
New Jersey Institute of Technology, Professor	8/09-7/19
New Jersey Institute of Technology, Associate Professor	8/02-7/09
New Jersey Institute of Technology, Assistant Professor	7/99-7/02
Duke University, Research Associate	9/97-7/99
Courant Institute of Mathematical Sciences, NYU, Research Associate	9/95-9/97

SHORT-TERM AND NONACADEMIC APPOINTMENTS

Department of Physics, College of Engineering, U. Buenos Aires	02/13-06/13
Department of Applied Physics and Applied Mathematics, Columbia University	09/12-01/13
Institute of Physics, UNCPBA, Tandil, Argentina, Fulbright Visiting Professor	02/06-05/06
The Courant Institute, New York University	09/05-01/06
Institute Rudjer Boskovic, Zagreb, Croatia, Research Assistant Scientist	03/89-09/89
KFA, Jülich, Germany, Visiting Scientist	09/88-11/88

EDUCATION

The City College of The City University of New York
Ph. D. in Physics, 6/95 Thesis "Theory of Sonoluminescence" (advisor: Joel Gersten)

University of Zagreb, Croatia
B. S. in Physics 6/89 (advisor Klaus Goeke, KFA, Jülich, Germany)

RESEARCH INTERESTS

Modeling: 1. Fluid Mechanics: thin films; coating flows; liquid-solid interaction; micro and nano scale fluidics; multiphase problems including phase change; colloidal systems; porous media flow.
2. Granular Matter: dense granular systems; effects of microstructure on macro properties; role of networks in material systems.
Methods: Numerical methods for nonlinear ordinary and partial differential equations; discrete element and Monte-Carlo simulations; asymptotic methods for nonlinear partial differential equations; topological data analysis (TDA).

HONORS

- Da Vinci Fellowship, Twente University (2022)
- Excellence in Research Prize and Medal (NJIT) (2020)
- Fellow of the American Physical Society (2017) with quote:
  "For understanding of complex fluid dynamics, from thin films to granular flows".
- Recipient of Leloir Award for International Cooperation in Science, Technology and Innovation by Argentine Ministry of Science and Technology (2017).
- Excellence in Research Award by the College of Sciences and Liberal Arts, NJIT (2013).
- Fulbright Scholar (2005).
- 'KITP Scholar', University of California, Santa Barbara, CA (2005 - 2007).
- Citation Index: ∼2500 (excluding self citations); H-index: 28 (as of May 2022, Scopus).

PAST AND CURRENT PhD STUDENTS AND POST-DOCTORAL ASSOCIATES

STUDENTS:

1. Joseph D'Addesa (co-advised with Linda Cummings)
   "Evolution of Two Layer Films exposed to Surface Acoustic Waves".
2. Mark Fasano (co-advised with Linda Cummings)
   "Separation of Two-fluid Mixtures by Surface Acoustic Waves".
3. Matt Illingworth (co-advised with Linda Cummings)
   "Network-based filtration models".
4. Rituparna Basak (2023)
   "Application of Computational Topology to Particulate Matter in Intermittent Flow Regime".
5. Binan Gu (2022) (co-advised with Linda Cummings)
   "Stochastic Modeling of Flow through Complex Geometries".
   First position after graduation: *Worcester Polytechnic Institute, Worcester, MA.*
6. Yixuan Sun (2021) (co-advised with Linda Cummings)
   "Modeling and Optimizing Porous Media Flow with Applications to Filtering".
   First position after graduation: *Oxford University, Oxford, UK.*
7. Ryan Allaire (2021) (co-advised with Linda Cummings)
   "Fluid Film Instabilities on Thermally Conductive Substrates".
   First position after graduation: *West Point Academy, West Point, NY.*
8. Chao Cheng (2021)
   "Intermittent Dynamics of Dense Particulate Matter";
   First position after graduation: *CertiK, Jersey City, NJ.*
9. Valeria Barra (2018) (co-advised with Shahriar Afkhami)
   "Numerical Simulations of Thin Viscoelastic Films";
   First position after graduation: *Postdoctoral associate, U. Colorado, Boulder, CO.*
10. Michael Lam (2018) (co-advised with Linda Cummings)
    "Instabilities in Nematic Liquid Crystal Films and Droplets";
    First position after graduation:
    Coastal & Hydraulic Laboratory, US Army Corps of Engineers, Vicksburg, MS.
11. Ivana Seric (2017) (co-advised with Shahriar Afkhami)
    "Direct Computations for Marangoni Driven Flows Using a Volume of Fluid Method";
    Recipient of the best PhD student award by the College for Sciences and Liberal Arts, 2015;
    First position after graduation: *Data Modeling for Philadelphia 76ers, Philadelphia, PA.*
12. Nanyi Dong (2017)
    "Instabilities of Liquid Metal Films on Nanoscale";
    First position after graduation: *Current, Inc., New York City, NY.*
13. Ensela Mema (2016) (co-advised with Linda Cummings)
    "Mathematical Models for Polymer-Nematic Interactions";
    First position after graduation: *West Point Academy, West Point, NY.*
14. Lenka Kovalcinova (2016)
    "Numerical Simulation of Dense Granular Systems with and without Cohesive Effects";
    First position after graduation:
    Postdoctoral associate, Dept. of Mathematical Sciences, NJIT, Newark, NJ.
15. Kyle Mahady (2015) (co-advised with Shahriar Afkhami)
    "Methods for the Direct Simulation of Nanoscale Film Breakup and Contact Angles";
    Recipient of the best PhD student award by the College for Sciences and Liberal Arts, 2014;
    First position after graduation: *Postdoctoral associate, U. Tennessee, Knoxville, TN.*
16. Chenjing Cai (2013) (co-advised with Linda Cummings)
    "Mathematical Models for Bistable Nematic Liquid Crystal Displays";
    First position after graduation: *Risk Management Associate, HSBC Bank.*

17. Te-Sheng Lin (2012) (co-advised with Linda Cummings)
    "Instabilities in Newtonian Films and Nematic Liquid Crystal Droplets";
    First position after graduation:
    Postdoctoral Associate, Dept. of Mathematics, Loughborough University, UK.
18. Xiaoni Fang (2011)
    "Energy Propagation in Jammed Granular Matter";
    First position after graduation: *Procysive Corporation, Rayleigh, NC.*
19. Nebojsa Murisic (2008)
    "Instabilities of Evaporative Drops and Films";
    First position after graduation: *Research Professor at Dept. of Mathematics, UCLA.*
20. Tetyana Segin (2004)
    "Nonlinear Long-wave Interfacial Stability of Two-layer Gas-liquid Flow";
    First position after graduation:
    Postdoctoral Associate, Dept. of Chem. Eng., U. Alberta., Alberta, Canada.

POST-DOCTORAL ASSOCIATES:

1. Lenka Kovalcinova (2016 - 2018)
   "*Quantifying Complex Spatiotemporal Systems*";
   Consequent position: Google, Inc., New York City, NY.
2. William Batson (2016 - 2018) (co-advised with Linda Cummings and David Shirokoff)
   "Complex temporal dynamics of heated fluid films;"
   Consequent position: *Hump Harvest Innovation, Boulder, CO.*
3. Arnaud Goullet (2010-2012)
   "Force field structure of dense granular matter";
   Consequent position: *Rutgers University, Piscataway, NJ.*
4. Michel Tsukahara (2010 - 2011);
   "Topological properties of force fields in jammed granular systems";
   Consequent position: *Dept. of Mathematics, U. Laussane, Switzerland.*
5. Yiguang Yu (2008 - 2009)
   "Applications of topological techniques to dense granular matter";
   Consequent position: *Dept. of Chem. Eng., MIT, Cambridge, MA.*
6. Svetlana Tlupova (2007 - 2009)
   (co-advised with Wooyoung Choi, Michael Siegel, Demetrious Papageorgiou)
   "Modeling of two phase flow using combined Stokes-Darcy model";
   Consequent position: *Dept. of Mathematics, U. Michigan, Ann Arbor, MI.*
7. Oleh Baran (2003 - 2004)
   "Statistical properties of dense granular materials";
   Consequent position: *Exxon, NJ.*

SELECTED TEACHING ACTIVITIES

1. Director of Graduate Studies at the Department of Mathematical Sciences (2007 - 2009, 2015 - 2016).
2. Supervised visiting PhD students, Jesus Maria Marcos Merino, U. Badajoz, Spain (2023), Svetozar Nesic, U. Carlos III, Madrid, Spain (2013) and Francesc Font Martinez, Polytechnic University, Barcelona, Spain (2014).
3. Supervising Undergraduate Capstone Laboratory http://cfsm.njit.edu/capstone.
4. Supervised numerous summer research projects (REU's).

CONSULTING ACTIVITIES

- KLA-Tencor, San Jose, CA, 2006-2008.

OTHER SELECTED ACTIVITIES

1. *Editorial Boards:*
   (a) Frontiers in Soft Matter, Specialty Chief Editor (2022 -);
   (b) Frontiers in Physics, Associate Editor (2021 -);
   (c) J. Engineering Mathematics, Associate Editor (2021 -);
   (d) Nanomaterials, Associate Editor (2021 -);
   (e) Crystals, Associate Editor (2021 -);
   (f) Papers in Physics, Associate Editor (2019 -).
2. *Conference Organizing:*
   (a) Chair of the Organizing Committee: *Frontiers in Applied and Computational Mathematics*, June 2017; May 2019.
   (b) Chair of the Organizing Committee: *Pan American Advanced Study Institute (PASI) on Frontiers in Particulate Media: From Fundamentals to Applications*, August 2014, La Plata, Argentina.
   (c) Chair of the Organizing Committee: *Pan American Study Institute (PASI) on Interfacial Fluid Dynamics,* August 2007, Mar del Plata, Argentina.
   (d) Organizer: Mini-Symposium on New Developments in Modeling and Simulation of Thin Films at SIAM CSE, Amsterdam, Netherlands, March 2023; Mini-symposium on Mechanics and Physics of Dense Granular Media at ESMC 2022, Galway, Ireland, July 2022; Workshop on Granular Matter across Scales, Lorentz Institute, Leiden, The Netherlands, March 2019; Workshop on Physics of Dense Granular Matter at ESMC 2018, Bologna, Italy, July 2018; Invited Session "Mesoscale Structures in Particulate-based Systems" at APS March Meeting, New Orleans, March 2017; Workshop on Statics and Dynamics of Dense Granular Matter at ESMC 2015, Madrid, Spain, July 2015; Mini-symposium on Advances in Modeling and Computation of Thin Liquid Films in Materials Science, SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, June 2013; Workshop on Predicting Response of Dense Granular Matter at ESMC 2012, Graz, Austria, July 2012; Workshop on Fluctuations and Response in Granular Materials, Center for Physics, Aspen, CO, 2011; Special Session on Mathematical and Computational Advances in Interfacial Fluid Dynamics at 1070th AMS meeting Worcester, MA, 2011; Symposium on Force Chains and Jamming at ESMC 2009 (9th European Solid Mechanics Conference), Lisbon, Portugal; Symposium on Granular Matter at ICIAM 2007 (6th International Congress on Industrial and Applied Mathematics), Zürich, Switzerland, 2007.
3. *Grants supporting international research collaborations:*
   (a) Force networks in granular packings: persistent homology by CONICET, Argentina (with L. Pugnaloni) (2017).
   (b) Stability, breakup, and self-assembly of thin films on nanoscale by APS (with J. Diez) (2012).
   (c) Grant from the Fulbright Foundation to perform teaching and research in Argentina during the Spring semester of 2006; developed a graduate course "Nonlinear Partial Differential Equations" taught at Department of Physics, Universitad del Centro de la Provincia de Buenos Aires, Tandil, Argentina (Spring 2006).
4. *Education related grants:*
   (a) Fellowship for the advising student, Ryan Allaire from the DOE Office of Science Graduate Student Research Program (SCGSR) (2018).
   (b) Grant from NSF Division of Undergraduate Education CCLI Adaptation and Implementation Program "Equipment and Modules for Capstone Course in Applied

Mathematics" (2005) (with Daniel Goldman, Michael Booty, Bruce Bukiet and Michael Siegel).

(c) Grant from the Council for International Exchange of Scholars/Fulbright Foundation to develop collaborative track of PhD program in Mathematical Sciences with University National del Centro de la Provincias de Buenos Aires, Argentina (2004) (with Javier Diez).

SELECTED SERVICE ACTIVITIES AT NJIT

- Director of the Center for Applied Mathematics and Statistics (2016 - 2020).
- Director of Graduate Studies of the Department of Mathematical Sciences (2007 - 2009, 2015 - 2016).
- Organizing Committee of the Conference Frontiers in Applied and Computational Mathematics: Chair (2017, 2019); Member (2006, 2011, 2012, 2015, 2018).

PAST AND CURRENT SUPPORT

Co-PI	NSF	GOALI: Network models for membrane filtration	08/22 - 07/25
PI	BSF	Phase Separation of Two-Fluid Mixtures using Surface Acoustic Waves	10/21 - 09/25
PI	ACS	Active Oil - Water Separation using Surface Chemistry and Surface Acoustic Waves	08/21 - 09/23
Co-PI	NASA	Phase Transitions in Colloid-Polymer Mixtures in Microgravity	02/20 - 01/21
PI	NSF	Conference on Frontiers in Applied and Computational Mathematics	05/19 - 05/21
PI	ARO	Stick-slip Dynamics and Failure in Granular Materials	10/18 - 09/21
Co-PI	NSF	Liquid Crystal films across scales: Dewetting & Dielectrowetting	09/18 - 08/21
Co-PI	NSF	Conference on Recent Advances on Numerical Wave propagation	08/18 - 07/19
Co-PI	NSF	ISS: GOALI: Nonequilibrium processing of Particle Suspensions with Thermal and Electric Field Gradients	07/18 - 06/21
PI	NASA	Structure Evolution during Phase Separation in Colloids under Microgravity	08/16 - 07/18
Co-PI	DARPA	Quantifying Complex Spatiotemporal Systems	08/16 - 07/18
Co-PI	NSF	GOALI: Predicting performance and fouling of membrane filters	09/16 - 08/21
PI	NSF	Collaborative Research: Computations, Modeling and Experiments of Self and Directed Assembly for Nanoscale Liquid Metal Systems	07/16 - 06/19
Co-PI	NSF	Collaborative Research: Computational and Data-Enabled Science and Engineering: Characterizing Dynamics of Particle-based Systems	08/15 - 07/18

PI	NSF	Pan-American Advanced Studies Institute (PASI) on Frontiers in Particulate Media: From Fundamentals to Applications	01/13 - 12/14
I	NSF	CREATIV: Nonlinear Data Reduction applied to Dense Granular Media	10/12 - 09/15
PI	NSF	Collaborative Research: Experimental and Computational Study of the Instabilities, Transport, and Self Assembly of Nanoscale Metalic Thin Films and Nanostructures	09/12 - 08/15
Co-PI	NSF	Modeling and analysis of nematic films: Flow substrate interactions	09/12 - 08/15
Co-PI	NSF	Support for the Symposium on Methods to Predict the Structural and Mechanical Properties of Dense Granular Media	07/12 - 07/13
PI	DTRA/DOD	Microstructure, Fluidization, and Control of Penetrator Trajectories in Granular Media	04/10 - 03/15
I	NSF/IFPRI	Collaboratory Research in Dense Particulate Flow	06/10 - 05/11
Co-PI	NSF	Modeling and Analysis of Nematic Liquid Crystals in Thin Geometries: Bistable Configurations and Free Surface Instabilities	09/09 - 08/13
PI	NSF	CDI-type II: Collaborative Research: Computational Homology, Jamming, and Force Chains in Dense Granular Flows	10/08 - 09/12
PI	NSF	Bridging the Spatial and Temporal Scales in Dense Granular Systems	08/06 - 07/09
PI	NSF	Pan-American Advanced Study Institute (PASI) on Interfacial Fluid Dynamics	09/06 - 08/08
PI	Fulbright Foundation	Dynamics of non-Newtonian Liquid Films involving Contact Lines	09/05–08/06
PI	NASA	Gravity and Granular Materials: Flight Project	04/04 -11/07
Co-PI	Fulbright Foundation	Establishment of Joint PhD Programs	07/04 - 06/06
PI	NSF	Instabilities in the Flow of Thin Liquid Films	02/02 - 01/05

REVIEWER FOR:

National Science Foundation; Department of Energy; Petroleum Research Foundation; Fulbright Foundation; German Physical Society; Netherlands Organization for Scientific Research, and numerous scientific journals.

PUBLISHED JOURNAL ARTICLES AND REVIEWS

1. Kovalcinova, L., Taranto, A., Kondic, L., Properties of interaction networks in compressed two and three dimensional particulate systems, *Gran. Matter* **26**, 11 (2024).
2. Basak, R., Kozlowski, R., Pugnaloni, L., Kramar, M., Socolar, J., Carlevaro, M., Kondic, L., Evolution of force networks during stick-slip motion of an intruder in a granular material: Topological measures extracted from experimental data, *Phys. Rev. E* **108**, 054903 (2023).

3. Bretz, P., Kondic, L., Kramar, M., Stochastic methods for slip prediction in a sheared granular system, *Phys. Rev. E* **107**, 054901 (2023).
4. Gu, B., Kondic, L., Cummings, L., Flow through pore-size graded membrane pore network, *Phys. Rev. Fluids* **8**, 044502 (2023).
5. Sun, Y., Kondic, L., Cummings, L., Filtration with Multiple Species of Particles, *Transp. Porous Media* **5**, 044306 (2022).
6. Gu, B., Kondic, L., Cummings, L., Network-based membrane filters: Influence of network and pore size variability on filtration performance, *J. Memb. Sci.* **657**, 120668 (2022).
7. Gu, B., Kondic, L., Cummings, L., A Graphical Representation of Membrane Filtration, *SIAM J. Appl. Math.* **82**, 950 (2022).
8. Kramar, M., Cheng, C., Basak, R., Kondic, L., On intermittency in sheared granular systems, *Soft Matter* **18**, 3583 (2022).
9. Allaire, R., Cummings, L., Kondic, L., Influence of thermal effects on the breakup of thin films of nanometric thickness, *Phys. Rev Fluids* **7**, 064001 (2022).
10. Pugnaloni, L. A., Carlevaro, M., Kozlowski, R., Zheng, H., Kondic, L., Socolar, J. E. S., Universal features of the stick-slip dynamics of an intruder moving through a confined granular medium, *Phys. Rev. E Letters* **105**, L042902 (2022).
11. Luding, S., Taghizadeh, K., Cheng, C., Kondic, L., Understanding slow compression and decompression of frictionless soft granular matter by network analysis, *Soft Matter* **18**, 1868 (2022).
12. Lam, M., Khusid, B., Kondic, L., Meyer, W. V., Role of diffusion in crystallization of hard-sphere colloids, Phys. Rev. E **104**, 054607 (2021)
13. Hauer, L., Wong, W. S. Y., Sharifi-Aghili, A., Kondic, L., Vollmer, D., Frost spreading and pattern formation on microstructured surfaces, Phys. Rev. E **104**, 044901 (2021), featured in Focus on Physics.
14. Basak, R., Carlevaro, M., Kozlowski, R., Cheng, C., Pugnaloni, L., Kramar, M., Zheng, H., Socolar, J., Kondic, L., Two Approaches to Quantification of Force Networks in Particulate Systems, J. Eng. Mech. **147**, 040211100 (2021).
15. Lin, T-S., Dijksman, J. A., Kondic, L., Thin liquid films in a funnel, *J. Fluid Mech.* **924**, A26 (2021).
16. Kondic, L., Cummings, L. J., Instabilities of nematic liquid crystal films, *Curr. Opin. Colloid In.* **455**, 101478 (2021).
17. Hauer, L., Wong, W. S. Y., Donadei, V., Hegner, K. I., Kondic, L., Vollmer, D., How Frost Forms and Grows on Lubricated Micro- and Nanostructured Surfaces, *ACS Nano* **15**, 4658 (2021).
18. Diez. J. A., Gonzalez, A. G., Garfinkel, D. A., Rack, P. P., Mckeown, J. T., Kondic, L., Simultaneous Decomposition and Dewetting of Nanoscale Alloys: A Comparison of Experiment and Theory, *Langmuir* **37**, 2575 (2021).
19. Allaire, R., Cummings, L. and Kondic, L., On efficient asymptotic modelling of thin films on thermally conductive substrates, *J. Fluid Mech.* **915**, A133 (2021).
20. Allaire, R., Kondic, L., Cummings, L., Rack, P., Fuentes-Cabrera, M., The Role of Phase Separation on Rayleigh-Plateau Type Instabilities in Alloys, *J. Phys. Chem. C* **125**, 5723 (2021).
21. Mema, E., Kondic, L., Cummings, L., Dielectrowetting of a thin nematic liquid crystal layer, *Phys. Rev. E* **103**, 032702 (2021).
22. Kramar, M., Kovalcinova, L., Mischaikow, K., Kondic, L., Quantitative measure of memory loss in complex spatiotemporal systems, *Chaos* **31**, 033126 (2021).
23. Lam, M., Cummings, L., Kondic, L., Effects of spatially-varying substrate anchoring on instabilities and dewetting of thin Nematic Liquid Crystal films, *Soft Matter* **16**, 10187 (2020).
24. Gu, B., Renaud, D. L., Sanaei, P., Kondic, L., Cummings, L., On the influence of pore connectivity on performance of membrane filters, *J. Fluid Mech.* **902**, A5 (2020).

25. Shah, S., Cheng, C., Jalali, P., Kondic, L., Failure of confined granular media due to pullout of an intruder: from force networks to a system wide response, *Soft Matter* **16**, 7685 (2020).
26. Sun, Y., Sanaei, P., Kondic, L., Cummings, L., Modeling and design optimization for pleated membrane filters, *Phys. Rev. Fluids* **5**, 044306 (2020).
27. Singh, A., Gameiro, M., Kondic, L., Mischaikow, K., Morris, J., Interaction network analysis in shear thickening suspensions, *Phys. Rev. Fluids* **5**, 034307 (2020).
28. Carlevaro, M., Kozlowski, R., Pugnaloni, L., Zheng, H., Socolar, J., Kondic, L., Intruder in a two-dimensional granular system: Effects of dynamic and static basal friction on stick-slip and clogging dynamics, *Phys. Rev. E* **101**, 012909 (2020).
29. Kondic, L., Gonzalez, A. G., Diez, J. A., Fowlkes, J. D., Rack, P., Liquid-State Dewetting of Pulsed-Laser-Heated Nanoscale Metal Films and Other Geometries, *Annu. Rev. Fluid Mech.* **52**, 235 (2020).
30. Kozlowski, R., Carlevaro, M., Daniels, K., Kondic, L., Pugnaloni, L., Socolar, J., Zheng, H., Behringer, R. P., Dynamics of a grain-scale intruder in a two-dimensional granular medium with and without basal friction, *Phys. Rev. E* **100**, 032905 (2019).
31. Kondic, L., Energy Propagation through dense granular systems, *Granular Matter* **21**, 85 (2019).
32. Allaire, R. H., Dhakane, A., Emery, R., Ganesh, P., Rack, P. D., Kondic, L., Cummings, L., Fuentes-Cabrera, M., Surface, Interface, and Temperature Effects on the Phase Separation and Nanoparticle Self Assembly of Bi-Metallic Ni0.5Ag0.5: A Molecular Dynamics Study, *Nanomaterials* **9**, 1040 (2019).
33. Batson, W., Cummings, L. J., Shirokoff, D., and Kondic, L., Oscillatory thermocapillary instability of a film heated by a thick substrate, *J. Fluid. Mech.* **872**, 928 (2019).
34. Barra, V., Afkhami, S., Kondic, L., Thin viscoelastic dewetting films of Jeffreys type subject to gravity and substrate interactions, *Eur. Phys. J. E* **42**, 12 (2019).
35. Lam, M., Cummings, L., Kondic, L., Computing dynamics of thin films via large scale GPU-based simulations, *J. Comput. Phys. X* **2**, *100001 (2019).*
36. Cuellar, I., Ravazzoli, P. D., Diez, J. A., Gonzalez, A. G., Roberts, N., Fowlkes, J., Rack, P., and Kondic, L., Self-assembly of a drop pattern from a two-dimensional grid of nanometric metallic filaments, *Phys. Rev. E* **98**, 043101 (2018).
37. Kovalcinova, L., Karmakar, S., Schaber, M., Schuhmacher, A.-L., Scheel, M., DiMichiel, M., Brinkmann, M., Seemann, R., and Kondic, L., Energy dissipation in sheared wet granular assemblies, *Phys. Rev. E* **98**, 032905 (2018).
38. Dijksman, J., Kovalcinova, L., Ren, J., Behringer, R., Kramar, M., Mischaikow, K., Kondic, L., Characterizing granular networks using topological metrics, *Phys. Rev. E* **97**, 042903 (2018).
39. Mema, E., Kondic, L., Cummings, L., Director gliding in a nematic liquid crystal layer: Quantitative comparison with experiments, *Phys. Rev. E* **97**, 032704 (2018).
40. Lam, M., Cummings, L., Kondic, L., Stability of thin fluid films characterised by a complex form of effective disjoining pressure, *J. Fluid. Mech.* **841**, 925 (2018), featured in *Advances in Engineering*.
41. Seric, I., Afkhami, S., Kondic, L., Influence of thermal effects on stability of nanoscale films and filaments on thermally conductive substrates, *Phys. Fluids* **30**, 012109 (2018).
42. Seric, I., Afkhami, S., Kondic, L., Direct numerical simulation of variable surface tension flows using a Volume-of-Fluid method, *J. Comput. Phys.* **352**, 615 (2018).
43. Takahashi, T., Clark, A. H., Majmudar, T., Kondic, L., Granular response to impact: Topology of the force networks, *Phys. Rev. E* **97**, 012906 (2018).
44. Hartnett, C. A., Seric, I., Mahady, K., Kondic, L., Afkhami, S., Fowlkes, J. D., Rack, P., Exploiting the Marangoni Effect To Initiate Instabilities and Direct the Assembly of Liquid Metal Filaments, *Langmuir* **33**, 8123 (2017).
45. Font, F., Afkhami, S., Kondic, L., Substrate melting during laser heating of nanoscale metal films, *Int. J. Heat Mass Transfer* **113**, 237 (2017).

46. Mema, E., Kondic, L., Cummings, L., Effects of flexoelectricity and weak anchoring on a Freedericksz transition cell, *Phys. Rev. E* **95**, 012701 (2017).
47. Barra, V., Afkhami, S., Kondic, L., Interfacial Dynamics of Thin Viscoelastic Films and Drops, *J. Non-Newtonian Fluid. Mech.* **237**, 26 (2016).
48. Dong, N., Kondic, L., Instability of nanometric fluid films on a thermally conductive substrate, *Phys. Rev. Fluids* **1**, 063901 (2016).
49. Kondic, L., Kramar, M., Pugnaloni, L.A., Carlevaro, M.C., Mischaikow, K., Structure of force networks in tapped particulate systems of disks and pentagons. II. Persistence analysis, *Phys. Rev. E* **93**, 062903 (2016).
50. Pugnaloni, L.A., Carlevaro, M.C., Kramar, M., Mischaikow, K., Kondic, L., Structure of force networks in tapped particulate systems of disks and pentagons. I. Clusters and loops, *Phys. Rev. E* **93**, 062902 (2016).
51. Mahady, K, Afkhami, S., Kondic, L., A numerical approach for the direct computation of flows including fluid-solid interaction: Modeling contact angle, film rupture, and dewetting, *Phys. Fluids* **28**, 062002 (2016).
52. Clark, A., Kondic, L., Behringer, R.P., Steady flow dynamics during granular impact, *Phys. Rev. E* **93**, 050901(R) (2016)
53. Kovalcinova, L., Goulet, A., Kondic, L., Scaling properties of force networks for compressed particulate systems; *Phys. Rev. E* **93**, 042903 (2016).
54. Mema, E., Kondic, L., Cummings, L., Substrate induced gliding in a nematic liquid crystal layer, *Phys. Rev. E* **92**, 062513 (2015).
55. Nesic, S., Cuerno, R., Moro, E., Kondic, L., Fully nonlinear dynamics of stochastic thin film dewetting, *Phys Rev. E Rapid Commun.* **92**, 061002(R) (2015).
56. Hartnett, C., Mahady, K., Fowlkes, J. D., Afkhami, S., Kondic, L., Rack, P., Instability of nano and microscale liquid metal filaments: Transition from single droplet collapse to multi-droplet breakup, *Langmuir* **31**, 13609 (2015).
57. Kovalcinova, L., Goullet, A., Kondic, L., Percolation and jamming transitions in particulate systems with and without cohesion, *Phys. Rev. E* **92**, 032204 (2015).
58. Mahady, K., Afkhami, S., Kondic, L., On the influence of initial geometry on the evolution of fluid filaments, *Phys. Fluids* **27**, 092104 (2015).
59. Mort, P., Michaels, J. N., Behringer, R. P., Campbell, C. S., Kondic, L., Kheiripour Langroudi, M., Shattuck, M., Tang, J., Tardos, G. I., Wassgren, C., Dense granular flow - A collaborative study, *Powder Technology*, **284**, 571 (2015).
60. Anderson, T. Mema, E., Kondic, L., Cummings, L., Transitions in Poiseuille flow of nematic liquid crystal, *Int. J. Nonlin. Mech.* **75**, 15 (2015).
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PUBLISHED BOOK CHAPTERS AND PROCEEDINGS ARTICLES

1. Kondic, L., Cummings, L., Allaire, R., Laser heating and melting of metals on nanoscale: breakup of metal filaments, *Proceedings of the 17th International Heat Transfer Conference,* ISSN: 2377-424X, pp. 1-15, August (2023).
2. Cheng, C., Zadeh, A., Kondic, L., Correlating the force network evolution and dynamics in slider experiments, *European Physical Journal Web of Conferences*, **249**, 02007 (2021).
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4. Clark, A., Petersen, A., Kondic, L, O'Hern, C., Behringer, R. P., Granular Impact: A Grain-scale Approach, page 319 - 352, in *Rapid Penetration into Granular Media*, Iskander, M., Bless, S., Omidvar, M., Elsevier, 2015.
5. Clark, A., Kondic,. L, Behringer, R.P., Granular Impact Dynamics: Fluctuations at Short Time Scales, *Powders and Grains 2013*, AIP Conference Proceedings **1542**, page 413-416 (2013).
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PRESENTATIONS

PLENARY & KEYNOTE

1. Modeling and computing heat flow for evolving films and drops on nanoscale, *Droplets 2021,* Darmstadt, Germany, August 2021.
2. Wetting on thermally conductive substates, *Conference on Wetting Dynamics,* Bonn, Germany, September 2020.
3. Instabilities of metal films on nanoscale, *Division of Fluid Mechanics of the Argentinian Physical Society Annual Meeting,* Buenos Aires, Argentina, November 2012.
4. Instabilities of thin films including contact lines, *Annual Meeting of Argentinian Physical Society,* La Plata, Argentina, April 2005.

INVITED

1. From materials science to computational topology: interaction networks in particulate systems, DLR, Cologne, Germany, October 2023.
2. Modeling filtration through random pore networks: Correlating structure and performance, Mechanical Engineering Seminar, PUC-Rio, Rio de Janeiro, Brazil, August 2023.
3. Computing force networks in particulate systems, *Workshop on Geometric Constraints: Materials, Graphs and Matroids, Rigidity and Packings*, Fields Institute, University of Toronto, Toronto, ON, Canada, July 2023.
4. Including thermal effects in modeling flow of thin fluid films, Physics of Fluids Seminar, U. Twente, Enschede, The Netherlands, June 2023.
5. Computing force networks in dense particulate systems, Department of Physics Seminar, U. Nacional del Pampa, Santa Rosa, Argentina, May 2023.
6. Computing dynamics of thin fluid films including thermal effects, Seminar, Department of Chemical Engineering, Technion, Haifa, Israel, March 2023.
7. Computing force networks in particulate systems, Applied Mathematics Seminar, Department of Mathematics, Rutgers University, Piscataway, NJ, March 2023.
8. Thin fluid films: From liquid crystals to liquid metals, Advanced School: "Introduction to wetting dynamics", Münster, Germany, February 2023.
9. Instabilities and dewetting of thin nematic liquid crystal films, Physics Colloquium, U. Ljubljana, Ljubljana, Slovenia, October 2022.
10. Computing force networks in particulate systems, Department of Physics, Friedrich-Alexander Erlangen-Nürnberg University, Erlangen, Germany, July 2022.
11. Analysis of force networks in granular systems using topological data analysis, *Granular Workshop*, La Plata, Argentina, May 2022.
12. Mathematical analysis of force networks in granular and suspension flow, *American Physical Society March Meeting,* Chicago, IL, March 2022.
13. Force networks in particulate systems, MSM Group Seminar, U. Twente, Enschede, The Netherlands, March 2022.
14. Modeling dynamics of thin films including thermal effects, U. Strathclyde, Glasgow, UK, October 2021.
15. Modeling nematic liquid crystal films on nanoscale, Soft Matter Seminar, Jozef Stefan Institute, Ljubljana, Slovenia, September 2021.

16. Structure of interaction networks in particulate systems, *Tri-Agency Symposium on"Multifunctionality, System Endurance & Intelligent Structures"*, (virtual) September 2021.
17. Topology methods for granular matter, Granular Matter Course Series, U. Twente, Enschede, The Netherlands, April 2020.
18. Instabilities of Liquid Crystal Films on Nanoscale, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, February 2020.
19. Modeling dynamics of thin films including thermal effects, Advanced School: "Introduction to wetting dynamics", Münster, Germany, February 2020.
20. Instabilities of Liquid Crystal Films on Nanoscale, *WE-Heraeus Seminar on Wetting and Capillarity,* Bad Honnef, Germany, November 2019.
21. Modeling and computing evolution of thin films on thermally conductive substrates, Max Planck Institute for Dynamics and Self-Organization, Göttingen, Germany, October 2019.
22. Modeling and computing evolution of thin films on thermally conductive substrates, Department of Physics, Münster University, Germany, October 2019.
23. Modeling metal films on nanoscale including thermal effects, Max Planck Institute for Polymer Research, Mainz, Germany, September 2019.
24. Understanding dense granular matter using persistent homology, U. Twente, Enschede, The Netherlands, September 2019.
25. Computing evolution of thin films on nanoscale, *Workshop on Challenges in Nanoscale Physics of Wetting Phenomena*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, August 2019.
26. Films on thermally conductive substrates, *Summer School on Capillarity-driven flows in microfluidics*, Bad Boekelo, The Netherlands, May 2019.
27. Modeling liquid crystal films on nanoscale, *BIRS Workshop on Modeling of Thin Liquid Films - Asymptotic Approach versus Gradient Dynamics*, Banff, Alberta, Canada, April 2019.
28. Topological measures describing interaction networks in dense particulate systems, *Workshop on Data Driven Dynamics: Algebraic Topology, Combinatorics and Analysis*, Centre de recherches mathématiques, Montreal, Canada, April 2019.
29. Quantifying interaction networks in particulate systems, *Lorentz Center Workshop on Granular Matter across scales*, Leiden, The Netherlands, March 2019.
30. Modeling thin liquid films: from liquid crystals to liquid metals, Department of Physics, Rutgers University, Piscataway, NJ, November 2018.
31. Percolation and Persistence of compressed granular matter, Department of Physics, University of Navarra, Pamplona, Spain, October 2018.
32. Percolation and Persistence of compressed granular matter, Department of Mathematics, University of Buenos Aires, Buenos Aires, Argentina, August 2018.
33. Stability of liquid films of nanoscale thickness, *IUTAM Symposium on Dynamics and Stability of Fluid Interfaces,* Gainesville, FL, April 2018.
34. Stability of fluid films of nanoscale thickness involving contact lines, *IMA Workshop on Dynamic Contact Lines: Progress and Opportunities,* Minneapolis, MN, March 2018.
35. Modeling thin liquid films: from liquid crystals to liquid metals, Courant Institute of Mathematical Sciences, New York University, New York, NY, March 2018.
36. Energy Dissipation in Particulate Matter with Cohesion, Universidad Tecnologica Nacional, La Plata, Argentina, August 2017.
37. Topological properties of force networks in dense particulate systems, *DARPA MoDyL Workshop*, Washington, DC, March 2017.
38. Films, rings and rivulets: Instabilities of liquid metals on nanoscale, Department of Applied Mathematics, University of Arizona, Tucson, AZ, October 2016.
39. Films, rings and rivulets: Instabilities of liquid metals on nanoscale, *CECAM Workshop "Non-equilibrium dynamics of thin films - solids, liquids and bioactive materials"*, Lausanne,

Switzerland, September 2016.

40. Force networks in particulate-based systems: persistence, percolation, and universality, Department of Engineering Technology, Twente University, Enschede, The Netherlands, June 2016.
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42. Statics and dynamics of granular force networks, *DARPA Dynamics, Geometry, and Big Data Sets Workshop,* Washington, DC, May 2015.
43. Films, rings and rivulets: Instabilities of liquid metals on nanoscale, Wageningen University, Wageningen, The Netherlands, May 2015.
44. Films, rings and rivulets: Instabilities of liquid metals on nanoscale, Department of Mathematics, University Carlos III, Madrid, Spain, March 2015.
45. Structure of contact and force networks in dense granular matter: From percolation to persistence, *PASI on Particulate Media,* La Plata, Argentina, August 2014.
46. Evolution of force networks in dense particulate matter, *Workshop on Grand Challenges in particulate media: From granular matter to colloids and active matter,* La Plata, Argentina, August 2014.
47. Instabilities of thin fluid films, The Physics of Fluids Group, Twente University, Enschede, The Netherlands, May 2014.
48. Statics and Dynamics of Force Networks in Dense Particulate Systems, *Northeast Complex Fluids and Soft Matter Workshop*, Piscataway, NJ, October 2013.
49. Instabilities and pattern formation in thin liquid films: from. micrometric to nanometric scales, *9th Ibero-American Workshop on Complex Fluids*, Maceio, Brazil, October 2013 (presented by J. Diez).
50. Mechanical response of granular matter exposed to impact, *Northeastern Granular Materials Workshop,* New Haven, CT, July 2013.
51. Instabilities of liquid metals on nanoscale, Department of Mathematics, University of Barcelona, Barcelona, Spain, July 2013.
52. Films, rings and rivulets: Instabilities of liquid metals on nanoscale, Center of Mathematical Research, Barcelona, Spain, June 2013.
53. Understanding dense particulate matter, Universidad Tecnologica Nacional, La Plata, Argentina, May 2013.
54. Understanding dense particulate matter, University of Buenos Aires, Buenos Aires, Argentina, April 2013.
55. Persistence of force networks in compressed granular media, Universidad Tecnologica Nacional, La Plata, Argentina, March 2013.
56. Films, rings and rivulets: Instabilities of liquid metals on nanoscale, *BIRS Workshop on Thin Liquid Films and Fluid Interfaces: Models, Experiments, and Applications*, Banff, Alberta, Canada, December 2012.
57. Thin fluid films on nanoscale: spreading, breaking, jumping, *Division of Fluid Mechanics of Argentine Physical Society Annual Meeting,* Buenos Aires, Argentina, November 2012.
58. From Energy Propagation to Force Networks in Dense Granular Matter, Department of Applied Mathematics and Applied Physics, Columbia University, New York, NY, October 2012.
59. Persistence of force networks in compressed granular media, *International Workshop on Computational Mechanics of Materials (IWCMM 2012),* Baltimore, MD, September 2012.
60. Films, rings, rivulets: application to liquid metals on nanoscale, *Multiflow Workshop,* Free University Brussels, Brussels, Belgium, June 2012.
61. From Energy Propagation to Force Networks in Dense Granular Matter, Department of Physics, Friedrich-Alexander Erlangen-Nürnberg University, Erlangen, Germany, June 2012.
62. Instabilities of Nanoscale Liquid Metal Films, Department of Mathematics, Imperial College, London, United Kingdom, March 2012.

63. Instabilities of Thin Liquid Films, Department of Physics, Saarlandes University, Saabrücken, Germany, March 2012.
64. Evolution of Nanoscale Liquid Metal Films, Montclair State University, Montclair, NJ, February 2012.
65. Modeling Dense Granular Matter, Soft Matter Seminar, New York University, New York City, November 2011.
66. Computational Homology Applied to Granular Media, *Lorentz Center Workshop on Fluctuations and Response in Active Materials: From Driven Granular Systems to Swarming Bacteria,* Leiden, The Netherlands, June 2011.
67. Discrete Element Simulations of Dense Granular Systems, *2011 Interdisciplinary Summer School: Granular Flows: From Simulations to Astrophysical Application.* U. Maryland, College Park, MD, June 2011.
68. Modeling spreading on nematic liquid crystal droplets, *Spring Eastern Sectional Meeting of American Mathematical Society,* Worcester, MA, May 2011.
69. Mathematical modeling in materials science: two case studies, EMPA/ETH, Zürich, Switzerland, September 2010.
70. Topology of force chains in dense granular materials, *International Conference on Applied Mathematics,* Hong Kong, June 2010.
71. Dense granular materials: from discrete to continuum description, *Spring Eastern Sectional Meeting of American Mathematical Society,* Newark, NJ, May 2010.
72. Discrete and continuum models for signal propagation in dense granular matter, Max Plank Institute for Complex Systems, Göttingen, Germany, May 2010.
73. Response of dense granular materials to an external perturbation, *TCG-XI DoD/DoE Workshop,* Picatinny Arsenal, NJ, April 2010.
74. Discrete and continuum models for signal propagation in dense granular matter, Ecole Supériure de Physique et de Chimie Industrielles (ESPCI), Paris, France, March 2010.
75. Signal propagation through dense granular systems, *DARPA Granular Dynamics Workshop,* Washington, DC, February 2010.
76. Discrete and continuum models for signal propagation in dense granular matter, Institute for Pure and Applied Mathematics (IMPA), Rio de Janeiro, Brazil, July 2009.
77. Discrete and continuum models for signal propagation in dense granular matter, Institute of Physics, UNCPBA, Tandil, Argentina, July 2009.
78. Signal propagation in dense granular systems, Lorentz Institute, Leiden University, Leiden, The Netherlands, June 2009.
79. Thin film instabilities, Department of Mathematics, Bonn University, Bonn, Germany, May 2009.
80. Instabilities of fluid films, drops and rivulets, Department of Mathematics, Worcester Polytechnic University, Worcester, MA, February 2009.
81. Instabilities of fluid films, Free University Brussels, Brussels, Belgium, June 2008.
82. Evaporative drops, *AIChE Annual Meeting*, Philadelphia, PA, November 2008.
83. Breakup of finite fluid films, Levich Institute, The City College of New York, New York, NY, April 2008.
84. Finite size effects on stability of fluid films and rivulets, *Euromech 490 Workshop on Dynamics and Stability of Thin Liquid Films and Slender Jets*, London, United Kingdom, September 2007.
85. Signal propagation through dense granular media, *6th International Congress on Industrial and Applied Mathematics*, Zürich, Switzerland, July 2007.
86. Instabilities of thin liquid films, LAM Research, Fremont, CA, June 2007.
87. Instabilities of photoresist films, IBM Almaden Research Center, San Jose, CA, June 2007.
88. Instabilities in the flow of thin liquid films, School of Engineering, Universidad de Buenos Aires, Buenos Aires, Argentina, June 2006.
89. Instabilities in the flow of thin liquid films, INTEC (Instituto de Desarrollo Tecnico para la

Industria Quemica), Santa Fe, Argentina, May 2006.

90. Granular systems under gravity, *IUTAM Symposium on Interactions for Dispersed Systems in Newtonian and Viscoelastic Fluids*, Guanajuato, Mexico, March 2006.
91. Dense Granular Systems, Courant Institute of Mathematical Sciences, New York University, New York, NY, February 2006.
92. On splitting of a liquid strip, *UCLA-IPAM-NSF workshop on Thin Films and Fluid Interfaces*, Los Angeles, CA, February 2006.
93. Dense Granular Systems, Department of Mechanical Engineering, New Jersey Institute of Technology, Newark, NJ, February 2006.
94. Extended Temperature for Dense Granular Systems, Department of Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ, December 2005.
95. Thin liquid films: from theory to applications, *Annual Meeting of Argentinian Physical Society*, La Plata, Argentina, September 2005 (Invited Plenary Talk).
96. Instabilities, coalescence and rupture in the flow of thin liquid films, Department of Physics, Twente University, Enschede, The Netherlands, July 2005.
97. Temperature for dense granular systems, *Granular Physics Workshop*, Kavli Institute for Theoretical Physics, UCSB, Santa Barbara, CA, June 2006.
98. Thin liquid films with contact lines: instabilities, coalescence and rupture, *1005th Meeting of the American Mathematical Society*, Newark, DE, April 2005.
99. Instabilities in the flow of thin liquid films, Courant Institute of Mathematical Sciences, New York University, New York, NY, December 2004.
100. Dynamics of thin liquid films, *International Workshop on Pattern formation through instabilities in thin liquid films: from fundamental aspects to applications*, Dresden, Germany, September 2004.
101. Extended granular temperature, *21st International Congress on Theoretical and Applied Mechanics*, Warsaw, Poland, August 2004.
102. Instabilities in the flow of thin liquid films including contact lines, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2004.
103. Elastic granular temperature, *Workshop on Fluctuations and Continuum Equations for Granular Flow*, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, April 2004.
104. Flow of thin films on heterogeneous surfaces, *Banff Fluids Workshop*, Banff, Alberta, Canada, December 2003.
105. Extended temperature for dense granular materials, *Granular Materials Workshop*, Clark University, Worcester, MA, July 2003.
106. Contact line instabilities of thin liquid films, Levich Institute, The City University of New York, New York, NY, May 2003.
107. Contact line instabilities of thin liquid films, Department of Mathematics, University of Delaware, Newark, DE, March 2003.
108. Dynamics of Sheared Granular Materials, *The Sixth Microgravity Fluids Physics and Transport Phenomena Conference*, Cleveland, OH, August 2002.
109. Instabilities, pattern formation, and Topological Changes in Flow of Thin Liquid Films, University of Buenos Aires, Buenos Aires, Argentina, August 2002.
110. Instabilities, pattern formation, and Topological Changes in Flow of Thin Liquid Films, University National Del Centro, Tandil, Argentina, August 2002.
111. Contact line instabilities of thin films, Department of Applied Physics and Applied Mathematics, Columbia University, New York City, NY, October 2001.
112. Thin Film Flows on Heterogeneous Surfaces, *Gordon Conference "Gravitational Effects in Physico-chemical Systems"*, New London, NH July 2001.
113. Contact line instabilities of thin liquid films, Department of Physics, Carnegie Mellon University, Pittsburgh, PA, April 2001.
114. Contact line instabilities of thin liquid films, Department of Mathematics, North Carolina

State University, Raleigh, NC, February 2001.

115. Contact line instabilities of thin liquid films, *AiChe 2000 Annual Meeting,* Los Angeles, CA, November 2000.
116. Instabilities in the flow of thin liquid films, *IUTAM Symposium on Free Surface Flows*, Birmingham, United Kingdom, July 2000.
117. Pattern formation in the flow of thin liquid films, Department of Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ, June 2000.
118. Contact line instabilities of thin liquid films, Department of Mathematics, Boston University, Boston, MA, April 2000.
119. Instabilities in the flow of thin liquid films, Department of Mathematics, University of Michigan, Ann Arbor, MI, March 2000.
120. Flows of thin films on an imperfect surface, *SIAM Annual Meeting*, Atlanta, GA, May 1999.
121. About computations of Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, Temple University, Philadelphia, PA, March 1999.
122. Computing Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, Southern Methodist University, Dallas, TX, February 1999.
123. Computing Sonoluminescence, Device Technology Department, Hewlett-Packard Company, Palo Alto, CA, January 1999.
124. Hele-Shaw flow of non-Newtonian fluids, Center for Applied Scientific Computing, Lawrence Livermore National Laboratory, Livermore, CA, January 1999.
125. Theory of Sonoluminescence, Department of Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ, January 1999.
126. About Ambient Pressure and Single Bubble Sonoluminescence, Department of Aerospace and Mechanical Engineering, Boston University, Boston, MA, December 1998.
127. Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, Worcester Polytechnic University, Worcester, MA, December 1998.
128. Pattern formation in the Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, State University of New York, Buffalo, NY, November 1998.
129. Pattern formation in the Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, North Carolina State University, Raleigh, NC, September 1998.
130. Pattern formation in the Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, Stanford University, Palo Alto, CA, June 1998.
131. Ambient Pressure Effect on Single Bubble Sonoluminescence, Department of Physics, Concordia University, Montreal, Canada, April 1998.
132. Pattern formation in the Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, Duke University, Durham, NC, February 1998.
133. Ambient Pressure Effect on Single Bubble Sonoluminescence, Center for Nonlinear and Complex Systems, Duke University, Durham, NC, February 1998.
134. Effect of ambient pressure on single bubble sonoluminescence, *NATO-ASI Workshop on Sonochemistry and Sonoluminescence*, Leavenworth, WA, August 1997.
135. Computing Hele-Shaw flow of non-Newtonian fluids, Department of Mathematics, Duke University, Durham, NC, March 1997.
136. Pattern formation in the Hele-Shaw flow of non-Newtonian fluids, Department of Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ, March 1997.
137. Single Bubble Sonoluminescence, Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM, December 1996.
138. Sonoluminescence: Discussion of some new experimental results, *Third joint meeting of ASA and ASJ*, Honolulu, HA, December 1996.
139. Theory of Single Bubble Sonoluminescence, Institute of Physics, Academia Sinica, Taipei, Taiwan, September 1995.
140. Theory of Single Bubble Sonoluminescence, Department of Mathematics, Kaochung University, Kaochung, Taiwan, September 1995.

141. Single Bubble Sonoluminescence, Courant Institute, New York University, New York, NY, April 1995.
142. Single Bubble Sonoluminescence, Institute for Scientific Computing, Lawrence Livermore National Laboratory, Livermore, CA, March 1995.

CONTRIBUTED PAPERS

1. Kondic, L., Gu, B., Illingworth, M., Cummings, L., Modeling Filtration through Random Pore Networks: Correlating Structure and Performance, *12th International Conference on Complex Networks and their Applications*, Menton, France, November 2023.
2. Allaire, R., Kondic, L., Cummings, L., Simulating Thermal Effects in the Dewetting of Liquid Metal Nanostructures, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
3. Li, Y., D'Addesa, J., Fasano, M., Diez, J., Cummings, L., Kondic, L., Manor, O., Extracting oil from an oil and water mixture by using their different wetting properties via the acoustowetting phenomenon, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
4. Fasano, M., D'Addesa, J., Li, Y., Manor, O., Diez, J., Cummings, L., Kondic, L., Forced Phase Separation in a Closed Cell, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
5. D'Addesa, J., Fasano, M., Diez, J., Li, Y., Manor, O., Cummings, L., Li, Y., Kondic, L., Thin Films Under Action of Surface Acoustic Waves: Experiments, Modeling, and Simulations, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
6. Kondic, L., Basak, R., Taghizader, K., Luding, S., Understanding slow compression of frictional granular particles by network analysis, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
7. Cummings, L., Gu, B., Sanaei, P., Kondic, L., Network modeling of membrane filtration with multiple fouling modes, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
8. Illingworth, M., Gu, B., Kondic, L., Cummings, L., On correlating topology and performance of pore networks in membrane filters, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Washington, DC, November 2023.
9. Khusid, B., Kondic, L., Hollingsworth, A. D., Chaikin, P., Meyer, W. V., Manufacturing of 3D colloidal crystals for infrared photonics in low-earth orbit, *ASGSR Conference*, Houston, TX, November 2023.
10. Khusid, B., Kondic, L., Hollingsworth, A. D., Chaikin, P., Meyer, W. V., Forming colloidal crystals in microgravity, *International Mechanical Engineering Congress and Exposition, IMECE 2023,* New Orleans, LA, November 2023.
11. Kondic, L., Bretz, P., Kramar, M., On slip predictability for sheared granular systems, *Particles 2023*, Milano, Italy, October 2023.
12. Jalali, P., Srujal, S., Kondic, L., Wall effects in granular column: Revisiting Janssen's equation, *9th International Conference on Discrete Element Methods,* Erlangen, Germany, September 2023.
13. Kondic, L., Cummings, L., Allaire, R., Laser heating and melting of metals on nanoscale: breakup of metal filaments, *17th International Heat Transfer Conference,* Cape Town, South Africa, August 2023.
14. Manor, O., Li, Y., Kondic, L., Cummings, L., Extraction of a dynamically wetting oil film from an oil-water mixture using capillarity and surface acoustic waves, *97th ACS Colloids and Surface Science Symposium,* Rayleigh, NC, June 2023.
15. Li, Y., D'Addesa, J., Fasano, M., Diez, J. A., Cummings, L. J., Kondic, L., Manor, O., Phase Separation of Oil-in-Water Emulsion with Surface Acoustic Wave, *11th Conference of the International Marangoni Association,* Bordeaux, France, June 2023.

16. Gu, B., Sanaei, P., Cummings, L., Kondic, L., Stochastic Modeling of Sieving in Membrane Filers, *American Physical Society March Meeting,* Las Vegas, NE, March 2023.
17. Mema, E., Cummings, L., Kondic, L., Evolution of a two-layer film with large viscosity ratio, *American Physical Society March Meeting,* Las Vegas, NE, March 2023.
18. Kondic, L., Cummings, L., Modeling and computing thin film flows: New frontiers and challenges, *SIAM Conference on Computational Science and Engineering,* Amsterdam, The Netherlands, February 2023.
19. Cummings, L., Lam, M., Kondic, L., Asymptotic modeling for evolving liquid crystal films, *SIAM Conference on Computational Science and Engineering,* Amsterdam, The Netherlands, February 2023.
20. Gu, B., Cummings, L., Kondic, L., Mathematical Modeling of Membrane Filtration in Undergraduate Honors Class, *Joint Mathematics Meeting,* Boston, MA, January 2023.
21. Allaire, R., Kondic, L., Cummings, L., Simulating the dynamics of liquid metal nanostructures, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Indianapolis, IN, November 2022.
22. Li, Y., Manor, O., D'Addesa, J., Diez, J. A., Cummings, L., Kondic, L., Spreading of a thin film exposed to a surface acoustic wave, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Indianapolis, IN, November 2022.
23. Diez, J. A., Gonzalez, A. G., Kondic, L., Thin films dewetting with phase separation: Dependence of surface tension and Hamaker constant on concentration, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Indianapolis, IN, November 2022.
24. Gu, B., Kondic, L., Cummings, L., On pore-size graded membrane networks, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Indianapolis, IN, November 2022.
25. Sun, Y., Kondic, L., Cummings, L., Multi-stage filtration with feed containing multiple species of particles, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Indianapolis, IN, November 2022.
26. Barnes, L., Khusid, B., Kondic, L., Meyer, W. Oza, A., The role of concentration-dependent viscosity on the dynamics of colloid-polymer mixtures, *ASGSR Conference*, Houston, TX, November 2022.
27. Lei, Q., Khusid, B., Kondic, L., Hollingsorth, A. D., Chaikin, P., Meyer W. V., Reich, A., Phase transitions in colloidal suspensions of spheres and ellipsoids under microgravity, *ASGSR Conference*, Houston, TX, November 2022.
28. Kondic, L, Cummings, L., Effects of spatially-varying substrate anchoring on instabilities and dewetting of thin nematic liquid crystal films, *Controling structure formation in soft materials*, Mainz, Germany, September 2022.
29. Taghizadeh, K., Luding, S. Cheng, C., Basak, R., Kondic, L., Understanding slow compression and decompression of frictionless/frictional soft granular matter by network analysis, *World Congress on Particle Technology (WCPT9)*, Madrid, Spain, September 2022.
30. Kondic, L, Cummings, L., Instabilities and dewetting of Liquid Crystal Films, *9th International Symposium on Bifurcation and Instabilities in Fluid Dynamics (BIFD)*, Groningen, Netherlands, August 2022.
31. Kondic, L, E. Mema, Cummings, L., Dielectrowetting of a thin nematic liquid crystal layer, *9th International Symposium on Bifurcation and Instabilities in Fluid Dynamics (BIFD)*, Groningen, Netherlands, August 2022.
32. Lei, Q., Khusid, B., Kondic, L., Hollingsworth, A. D., Chaikin, P., Meyer W. V., Reich, A., Colloidal phase transitions under microgravity, *ISS Research and Development Conference*, Washington, DC, July 2022.
33. Kondic, L., Basak, R., Carlevaro, M., Pugnaloni, L., Kramar, M., Zheng, H., Sololar, J., Computing and quantifying force networks in experiments and simulations, *European Solid Mechanics Conference*, Galway, Ireland, July 2022.

34. Pugnaloni, L. Carlevaro, M., Kozlowski, R., Zheng, H., Kondic, L., Socolar, J., Universal properties of the stick-slip dynamics of an intruder in confined granular matter, *XIX Regional Congress of Statistical Physics and its Applications to Condensed Matter Physics,* La Plata, Argentina, May 2022.
35. Kondic, L, Carlevaro, M., Pugnaloni, L., Analyzing force networks in granular systems using topological data analysis, *XIX Regional Congress of Statistical Physics and its Applications to Condensed Matter Physics,* La Plata, Argentina, May 2022.
36. Kondic, L, Cummings, L., Instabilities of Liquid Crystal Films, *XIX Regional Congress of Statistical Physics and its Applications to Condensed Matter Physics,* La Plata, Argentina, May 2022.
37. Kondic, L., Basak, R., Socolar, J., Pugnaloni, L., Carlevaro, M., Kramar, M., Zhang, H., Kozlowski, R., Stick-slip dynamics of an intruder pulled through granular matter, *American Physical Society March Meeting,* Chicago, IL, March 2022.
38. Allaire, R., Kondic, L, Cummings, L., Modeling thermal effects in the droplet assembly of nanoscale molten metal films, *American Physical Society March Meeting,* Chicago, IL, March 2022.
39. Mema, E., Cummings, L., Kondic, L., Interfacial dynamics of a two-layer thin film, *American Physical Society March Meeting,* Chicago, IL, March 2022.
40. Meyer W. V., Khusid, B., Kondic, L., Lei, Q., Hollingsworth, A. D., Chaikin, P. M., Recent experiments on hard sphere colloidal crystallization in microgravity on the International Space Station, *American Chemical Society Spring Meeting*, San Diego, CA, March 2022.
41. Lei, Q., Khusid, B., Kondic, L., Hollingsworth, A., Chaikin, P., Meyer, W., Temperature gradient effects in colloids of ellipsoidal particles under microgravity, *ASME 2021 IMECE,* (virtual) November 2021.
42. Gu, B., Kondic, L., Cummings, L., A graphical representation of membrane filtration, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Phoenix, AZ, November 2021.
43. Barnes, L., Kondic, L., Khusid, B., Meyer, W. V., Oza, A., Phase-field modeling of colloid-polymer mixtures in microgravity, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Phoenix, AZ, November 2021.
44. Kondic, L., Cummings, L. J., Lam, M., Dewetting of thin nematic films in the presence of spatially varying substrate anchoring, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Phoenix, AZ, November 2021.
45. Mema, E., Kondic, L., Cummings, L. J., Dielectrowetting of thin nematic liquid crystal films, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Phoenix, AZ, November 2021.
46. Diez, J. A., Gonzalez, A. G., Kondic, L., Hydrodynamic instability and phase separation in nanometric thin films of melted metalic alloys, *Division of Fluid Mechanics Meeting of Argentine Physics Society (Fluidos 2021)*, (virtual) November 2021.
47. Lei, Q., Khusid, B., Kondic, L., Hollingsorth, A. D., Chaikin, P., Meyer W. V., Reich, A., Colloidal crystallization under microgravity, *ASGSR Conference*, November 2021.
48. Lei, Q., Khusid, B., Kondic, L., Hollingsorth, A. D., Chaikin, P., Meyer W. V., Reich, A., Building colloidal crystals under microgravity, *ISS R&D Conference* (virtual), August 2021.
49. Kondic, L., Cummings, L. J., Modeling liquid crystal films on nanoscale, *Dynamics Days Europe* (virtual), August 2021.
50. Allaire, R., Cummings, L. J., Kondic, L., Detailed thermal modeling of droplet assembly in nanoscale molten metal films, *7th Micro and Nano Flows Conference* (virtual), May 2021.
51. Sun, Y., Kondic, L., Cummings, L. J., Filtration with multiple spieces of particles, *Interpore Conference*, (virtual), May 2021.
52. Gu, B., Kondic, L., Cummings, L. J., A graphical representation of membrane filtration with adsorption, *Interpore Conference*, (virtual), May 2021.
53. Cummings, L. J., Lam, M., Mema E., and Kondic, L., Free surface dynamics of nematic

liquid crystal films: dewetting and dielectrowetting, *SIAM Conference on Mathematical Aspects of Materials Science*, (virtual) May 2021.

54. Kondic, L., Cheng, C., Basak, R., Kramar, M., From topology of force networks to avalanche prediction in sheared particulate systems, *SIAM Conference on Mathematical Aspects of Materials Science*, (virtual) May 2021.
55. Kramar, M., Kovalcinova, L., Mischaikow, K., Kondic, L., Towards understanding of complex spatio-temporal systems, *IMSI Workshop on Topological Data Analysis,* (virtual), April 2021.
56. Chao, C., Basak, R., Kramar, M., Kondic, L., Insight from Topological Data Analysis into Precursors to Stick-slip Events in Sheared Granular Systems, *IMSI Workshop on Topological Data Analysis,* (virtual), April 2021.
57. Basak, R., Cheng, C., Kozlowski, R., Carlevaro, C. M., Pugnaloni, L. A., Zheng, H., Socolar, J. E. S., Kondic, L., Application of computational topology to analysis of granular material force networks in the stick-slip regime, *IMSI Workshop on Topological Data Analysis,* (virtual), April 2021.
58. Carlevaro, C. M., Kozlowski, R., Pugnaloni, L. A., Zheng, H., Socolar, J. E. S., Basak, R., Cheng, C., Kondic, L., Dynamics of an intruder moving through a confined granular medium: Rescaled packing fraction yields data collapse for different intruder and system sizes, *American Physical Society March Meeting,* (virtual) Chicago, IL, March 2021.
59. Basak, R., Cheng, C., Kozlowski, R., Carlevaro, C. M., Pugnaloni, L. A., Zheng, H., Socolar, J. E. S., Kondic, L., Application of computational topology to analysis of granular material force networks in the stick-slip regime, *American Physical Society March Meeting,* (virtual) Chicago, IL, March 2021.
60. Singh, A., Basak, R., de Pablo, J., Kondic, L., Jaeger, H., Quantifying the influence of rolling friction on force networks and rheology in sheared suspensions, *American Physical Society March Meeting,* (virtual) Chicago, IL, March 2021.
61. Khusid, B., Lei, Q., Kondic, L., Chaikin, P. M., Hollingsworth, A. D., Reich, A., Meyer, W., Phase transitions in colloids under microgravity, *American Physical Society March Meeting,* (virtual) Chicago, IL, March 2021.
62. Khusid, B., Lam, M., Kondic, L., Meyer, W., Interplay of gravity and diffusion in crystallization of hard-sphere colloids, *American Physical Society Division of Fluid Mechanics Annual Meeting,* (virtual) Chicago, IL, March 2021.
63. Sun, Y., Cummings, L., Kondic, L., Membrane filtration with multiple species of particles, *American Physical Society Division of Fluid Mechanics Annual Meeting,* (virtual) Chicago, IL, November 2020.
64. Gu, B., Sanaei, P., Kondic, L., Cummings, L., Stochastic Modeling of Sieving in Membrane Filters with Complex Pore Morphology, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Seattle, WA, November 2019.
65. Allaire, R., Fuentes-Cabrera, M., Rack, P., Cummings, L., Kondic, L., Simulating instabilities of liquid metal alloys on nanoscale using molecular dynamics simulations, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Seattle, WA, November 2019.
66. Kondic, L., Lam, M., Khusid, B., Meyer, W., Crystallization of hard-sphere colloids at large particle volume fractions, *ASGSR Annual Meeting,* Denver, CO, October 2019.
67. Kondic, L., Allaire, R., Cummings, L., Metal films of nanoscale thickness: from targeted experiments to predictive modeling and accurate simulations, *13th European Coating Symposium*, Heidelberg, Germany, September 2019.
68. Kondic, L., Gu, B., Sanai, P., Cummings, L., Stochastic Modeling of Flow Through Complex Geometries, *27th Congress on Statistical Physics*, Buenos Aires, Argentina, July 2019.
69. Kondic, L., Kramar, M., Kovalcinova, L., Mischaikow, K., Loss of Memory in Dense Sheared Particulate Systems, *27th Congress on Statistical Physics*, Buenos Aires, Argentina, July 2019.

70. Dijksman J., Kramar, M., Mischaikow, K., Kondic, L., Characterizing granular networks using topological metrics, *Workshop on Granular and Particulate Networks*, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, July 2019.
71. Cheng, C., Basak, R., Kondic, L., The Precursors to Stick-Slip Events in Sheared Granular Systems, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2019.
72. Basak, R., Cheng, C., Kondic, L., Application of Machine Learning to the Stick-Slip Dynamics of Particulate Media, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2019.
73. Kozlowski, R., Carlevaro, M., Daniels, K., Kondic, L., Pugnaloni, L. A., Socolar, J. E.-S., Zheng, H., Behringer, R. P., Dynamics of a Single-Intruder Driven Through a Granular Medium: Effects of Packing Fraction, Basal Friction, and Interparticle Friction, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2019.
74. Kondic, L., Lam, M., Cummings, L., Stability of fluid films of nanoscale thickness involving contact lines, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
75. Allaire, R., Kondic, L., Cummings, L., Including thermal effects in computing dynamics of thin films on thermally conductive substrates, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
76. Cummings, L., Lam, M., Kondic, L., Dewetting and pattern formation in ultra-thin films of nematic liquid crystal: effects of variable substrate anchoring, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
77. Kondic, L., Lam, M., Meyer, W., Khusid, B., Quantitative Modeling of Growth of Colloid Nuclei, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
78. Souza, C., Kondic, L., Cummings, L., Modeling Filtering Process Using Stochastic Simulations of Monte-Carlo Type, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
79. Sun, Y., Sanaei, P., Kondic, L., Cummings, L., Modeling and design optimization for pleated membrane filters, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
80. Gu, B., Renaud, D., Sanaei, P., Kondic, L., Cummings, L., Modeling Connectivity and Asymmetry in Membrane Filters *American Physical Society Division of Fluid Mechanics Annual Meeting,* Atlanta, GA, November 2018.
81. Garfinkel, D., Rack, P. D., Allaire, R., Fowlkes, J., Kondic, L., Fuentes-Cabrera, M., Emery, R., Directed and Self-Assembly of Elemental and Bimetallic Thin Films in the 2Au-Ag-Ni System via Pulsed Laser Dewetting, *Materials Research Society Fall Meeting,* Boston MA, November 2018.
82. Kondic, L., Lam, M., Khusid, B., Meyer, W., Growth of Colloid Nuclei, *ASGSR Annual Meeting,* Washington, DC, October 2018.
83. Kondic, L., Cheng, C., Kovalcinova, L., Kramar, M., Mischaikow, K., Force networks and stick-slip dynamics, 55th SES Annual Technical Meeting, Madrid, Spain, October 2018.
84. Kondic, L., Kovalcinova, L., Kramar, M., Mischaikow, K., Loss of Memory and Correlation in Dense Sheared Particulate Systems, 55th SES Annual Technical Meeting, Madrid, Spain, October 2018.
85. Cheng, C., Kovalcinova, L., Kondic, L., Force networks in sheared granular systems, *16th Northeastern Granular Materials Workshop*, New Haven, CT, June 2018.
86. Kovalcinova, L., Kondic, L., Wave propagation in stochastic granular chains with random masses, *NCS9 Northeastern Complex Fluids & Soft Matter Workshop*, Philadelphia, PA, May 2018.
87. Sun, Y., Kondic, L., Cummings, L., Optimization for pleated membrane filter design, *NCS9 Northeastern Complex Fluids & Soft Matter Workshop*, Philadelphia, PA, May 2018.
88. Gu, B., Renaud, D., Kondic, L., Cummings, L., Modeling asymmetry of membrane filters

with complex morphology, *NCS9 Northeastern Complex Fluids & Soft Matter Workshop*, Philadelphia, PA, May 2018.

89. Kondic, L., Seric, I., Afkhami, S., Direct Computations of Marangoni-Induced Flows Using a Volume of Fluid Method, *IMA Workshop on Dynamic Contact Lines: Progress and Opportunities*, Minneapolis, MN, March 2018.
90. Kondic, L., Kovalcinova, L., Kramar, M., Mischaikow, K., Loss of Memory in Dense Sheared Particulate Systems, *DPG Annual Meeting*, Berlin, Germany, March 2018.
91. Kondic, L., Lam, M., Khusid, B., Meyer, W., Growth and Interaction of Colloid Nuclei under Microgravity, *DPG Annual Meeting*, Berlin, Germany, March 2018.
92. Kovalcinova, L., Taranto, A., Kondic, L., Comparison of the Force Network Topology of the 2D and 3D Granular Systems, *March Meeting of the American Physical Society,* Los Angeles, CA, March 2018.
93. Singh, A., Sedes, O., Chakraborty, B., Kondic, L., Denn, M., Morris, J., Stress Correlations in Shear Thickening Suspensions, *March Meeting of the American Physical Society,* Los Angeles, CA, March 2018.
94. Kovalcinova, L., Kramar, M., Mischaikow, K., Kondic, L., Comparison of the force network topology of the 2D and 3D granular systems, *8th Northeast Complex Fluids and Soft Matter Workshop*, New York, NY, January 2018.
95. Sun, Y., Cummings, L., Kondic, L., Mathematical modeling of pleated membrane filters, *8th Northeast Complex Fluids and Soft Matter Workshop*, New York, NY, January 2018.
96. Sanaei, P., Gu, B., Cummings, L., Kondic, L., Stochastic Approach to Model Fouling in Membrane Filters, *8th Northeast Complex Fluids and Soft Matter Workshop*, New York, NY, January 2018.
97. Lam, M., Khusid, B., Meyer, W., Kondic, L., Growth and Interaction of Colloid Nuclei, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Denver, CO, November 2017.
98. Kondic, L., Seric, I., Afkhami, S., On the influence of thermal effects on the dynamics of thin films and filaments, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Denver, CO, November 2017.
99. Batson, W., Cummings, L., Kondic, L., Instability of a liquid film non locally heated from below, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Denver, CO, November 2017.
100. Sanaei, P., Gu, B., Kondic, L., Cummings, L., Stochastic approach to model fouling in membrane filters with complex pore morphology, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Denver, CO, November 2017.
101. Kondic, L., Lam, M., Khusid, B., Meyer, W., Growth and Interaction of Colloid Nuclei, *ASGSR Annual Meeting,* Seattle, WA, October 2017.
102. Kondic, L, Kovalcinova, L., Kramar, M., Mischaikow, K., Evolution of force networks in dense granular matter close to jamming, *Particles 2017, V International Conference on Particle-based Methods. Fundamentals and Applications*, Hannover, Germany, September 2017.
103. Seric, I., Afkhami, S., Kondic, L., Direct Computations of Marangoni-Induced Flows Using a Volume of Fluid Method, *14th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2017.
104. Taranto, A., Kovalcinova, L., Kondic, L., Force Chains in Granular Materials, *14th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2017.
105. Nakrani, M., Dziedzic, A., Ezra, B., Syed, M., Afkhami, S., Kondic, L., Breakup of liquid filaments, *14th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2017.
106. Takahashi, T., Ballardo, J., Kondic, L., Analyzing Force Networks in Granular Systems using Persistent Homology, *14th Conference on Frontiers in Applied and Computational*

Mathematics, Newark, NJ, June 2017.

107. Cummings, L., Kondic, L., Lam, M., Instability and dewetting of ultra-thin nematic liquid crystal films, *18th International Workshop on Numerical Methods for Non-Newtonian Flows*, Vancouver, Canada, June 2017.
108. Kovalcinova, L., Kramar, M., Mischaikow, K., Kondic, L., On connection between Topology and Memory Loss in Sheared Granular materials, *7th Northeast Complex Fluids and Soft Matter Workshop*, Princeton, NJ, May 2017.
109. Sanaei, P., Sun, Y., Cummings, L.J., Kondic, L., Modeling filtration through pleated membrane filters, *9th International Conference on Porous Media*, Rotterdam, Netherlands, May 2017.
110. Sanaei, P., Cummings, L.J., Kondic, L., Mathematical modeling of membrane filtration, *9th International Conference on Porous Media*, Rotterdam, Netherlands, May 2017.
111. Kondic, L., Kovalcinova, L., Karmakar, S., Schaber, M., Hippler, A-L., Scheel, M., DiMichiel, M., Herminghaus, S., Brinkmann, M., Seemann, R., Energy Dissipation in Sheared Wet Granular Systems, *March Meeting of the American Physical Society,* New Orleans, March 2017.
112. Kovalcinova, L., Kramar, M., Mischaikow, K., Kondic, L., On Connection between Topology and Memory Loss in Sheared Granular Materials, *March Meeting of the American Physical Society,* New Orleans, LA, March 2017.
113. Seric, I., Afkhami, S., Kondic, L., Direct Computations of Marangoni-Induced Flows Using a Volume of Fluid Method, *SIAM Conference on Computational Science & Engineering*, Atlanta, GA, February 2017.
114. Afkhami, S., Seric, I., Kondic, L., Kim, H., Shardt, O., Stone, H.A., Spreading and mixing of drops on a miscible liquid of different surface tension, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Portland, OR, November 2016.
115. Lam, M., Cummings, L.J., Kondic, L., Nucleation type instabilities in partially wetting nanoscale nematic liquid films, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Portland, OR, November 2016.
116. Kondic, L., Dong, N., Instabilities of nanometric fluid films on a thermally conductive substrate, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Portland, OR, November 2016.
117. Seric, I., Mahady, K., Afkhami, S., Hartnett, C., Fowlkes, J., Rack, P., Kondic, L., Explicit demonstration of the role of Marangoni effect in the breakup of nanoscale liquid filaments, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Portland, OR, November 2016.
118. Seric, I., Mahady, K., Afkhami, S., Kondic, L., Breakup of liquid metal filaments (entry in the gallery of fluid motion), *American Physical Society Division of Fluid Mechanics Annual Meeting,* Portland, OR, November 2016.
119. Lam, M., Cummings, L., Kondic, L., Large Scale GPU Simulations of the Generalized Thin Film Equation (entry in the gallery of fluid motion), *American Physical Society Division of Fluid Mechanics Annual Meeting,* Portland, OR, November 2016.
120. Kondic, L., Lam, M., Khusid, B., Meyer, W., Modeling Growth of Colloid Nuclei, *ASGSR Annual Meeting,* Cleveland, OH, October 2016.
121. Adriazola, J., Dari, H., Lam, M., Kondic, L., Diffusion Limited Aggregation and Saffman-Taylor Instability in Non-Newtonian Hele-Shaw Flow, *13th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2016.
122. Seric, I., Afkhami, S., Kondic, L., Direct Computations of Marangoni-Induced Flows Using a Volume of Fluid Method, *13th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2016.
123. Lam, M., Cummings, L.J., Kondic, L., Breakup of Partially Wetting Thin Nematic Liquid Crystal Film, *13th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2016.

124. Kovalcinova, L., Kondic, L., Scaling Properties of Force Networks for Compressed Particulate Systems, *13th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2016.
125. Kondic, L., Dong, N., Instabilities of nanometric fluid films on thermally conductive substrate, *8th Conference of the International Marangoni Association,* Bad Honneff, Germany, June 2016.
126. Behringer, R.P., Wang, D., Ren, J., Bares, J., Chakraborty, B., Kovalcinova, L., Kondic, L., What are the microscopic origins of shear jamming?, *March Meeting of the American Physical Society,* Baltimore, MD, March 2016.
127. Mema, E., Cummings, L.J., Kondic, L., Effect of an applied electric field on a weakly anchored non-planar Nematic Liquid Crystal layer, *March Meeting of the American Physical Society,* Baltimore, MD, March 2016.
128. Dijksman, J., Ren, J., Behringer, R. P., Kovalcinova, L., Kondic, L., Kramar, M., Mischaikow, K., Quantitative Comparison of Experiments and Numerics in Granular Materials, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Boston, MA, November 2015.
129. Cummings, L., Anderson, T., Mema, E., Kondic, L., Topological transitions in unidirectional flow of nematic liquid crystal, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Boston, MA, November 2015.
130. Mahady, K., Afkhami, S., Kondic, L., Direct numerical simulation of nanofilm instability driven by liquid/solid Interactions, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Boston, MA, November 2015.
131. Kondic, L., Mahady, K., Afkhami, S., On the influence of initial geometry on the evolution of liquid filaments, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Boston, MA, November 2015.
132. Kondic, L., Goullet, A., Kramar, M., Mischaikow, K., Carlevaro, C.M., Pugnaloni, L.A., Topological measures describing force networks in dense granular matter, *European Solid Mechanics Conference (ESMC 2015),* Madrid, Spain, July 2015.
133. Kondic, L., Mahady, K., Afkhami, S., Influence of initial geometry on the evolution of liquid filaments, *Bifurcation and Instabilities in Fluid Dynamics,* Paris, France, July 2015.
134. Kondic, L., Lam, M., Lin, T-S., Cummings, L., Instabilities of a nematic liquid film on an incline, *Bifurcation and Instabilities in Fluid Dynamics,* Paris, France, July 2015.
135. Lam, M., Kondic, L., Instabilities in Two-Phase Flow of Complex Fluids, *12th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2015.
136. Lam, M., Cummings, L., Lin, T-S., Kondic, L., Asymptotic model for three dimensional coating flow of nematic liquid crystal on an inclined substrate, *March Meeting of the American Physical Society,* San Antonio, March 2015.
137. Cummings, L., Mema, E.., Cai, C., Kondic, L., Electric field variation within a nematic liquid crystal layer, *March Meeting of the American Physical Society,* San Antonio, March 2015.
138. Mema, E.., Cummings, L., Kondic, L,. Substrate induced gliding for a nematic liquid crystal layer, *March Meeting of the American Physical Society,* San Antonio, March 2015.
139. Zhang, Y., Clark, A., Kondic, L., Behringer, R.P., High speed impacts on a granular material, *March Meeting of the American Physical Society,* San Antonio, March 2015.
140. Kovalcinova, L., Goullet, A., Kondic, L., Scaling of force networks for compressed particulate systems, *March Meeting of the American Physical Society,* San Antonio, March 2015.
141. Kondic, L., Kovalcinova, L, Goullet, A., Percolation and jamming transitions in particulate systems with and without cohesion, *March Meeting of the American Physical Society,* San Antonio, March 2015.
142. Seric, I., Mahady, K., Afkhami, S., Kondic, L., Volume of Fluid simulations of liquefied metal nanofilms with Marangoni effects, *American Physical Society Division of Fluid Mechanics Annual Meeting,* San Francisco, PA, November 2014.

143. Mahady, K., Afkhami, S., Kondic, L., Inclusion of fluid-solid interaction in Volume of Fluid to simulate spreading and deweting for large contact angles, *American Physical Society Division of Fluid Mechanics Annual Meeting,* San Francisco, PA, November 2014.
144. Dong, N., Wu, Y., Fowlkes, J., Rack, P., Kondic, L., Instabilities of structured metal films on nanoscale, *American Physical Society Division of Fluid Mechanics Annual Meeting,* San Francisco, PA, November 2014.
145. Cummings, L., Kondic, L., Lam, M., Lin, T-S., Free surface dynamics of nematic liquid crystal, *American Physical Society Division of Fluid Mechanics Annual Meeting,* San Francisco, PA, November 2014.
146. Kondic, L., Pugnaloni, L., Carlevaro, M., Kramar, M., Mischaikow, K., Influence of particle shape on properties of force networks in particulate systems, *American Physical Society Division of Fluid Mechanics Annual Meeting,* San Francisco, PA, November 2014.
147. Clark, A., Zhang, Y., Kondic, L., Behringer, R.P., Granular impact at high Mach Number, *American Physical Society Division of Fluid Mechanics Annual Meeting,* San Francisco, PA, November 2014.
148. Kovalcinova, L., Goullet, A., Kondic, L., Characterizing dense granular systems by percolation and statistical properties of force networks, *PASI on Particulate Media*, La Plata, Argentina, August 2014.
149. Kramar, M, Mischaikow, K., Kondic, L., Goullet, A., Analyzing the dynamics of pattern formation in the space of persistence diagrams, *PASI on Particulate Media*, La Plata, Argentina, August 2014.
150. Kondic, L., Lam, M., Lin, T-S., Thiele, U., Cummings, L., Asymptotic models for liquid crystal films, *8th European Nonlinear Dynamics Conference,* Vienna, Austria, July 2014.
151. Kondic, L., Lam, M., Lin, T-S., Thiele, U., Cummings, L., Instabilities of liquid crystal films, *7th Conference of the International Marangoni Association,* Vienna, Austria, June 2014.
152. Kondic, L., Dong, N., Wu, Y., Fu, S., Fowlkes, J., Rack, P., Instabilities of structured metal films on nanoscale, 7th Conference of the International Marangoni Association, Vienna, Austria, June 2014.
153. Fowlkes, J., Diez, J., Gonzalez, A., Kondic, L., Mahady, K., Afkhami, S., Wu, Y., Roberts, P. D., Rack, P., Metal nanoparticle self - organization by pulsed laser melting and nanolithography, *15th International Symposium on Laser Precision Microfabrication*, Vilnius, Lithuania, June 2014.
154. Lam, M., Kondic, L., Hele-Shaw Instabilities of Newtonian and Non-Newtonian Two-Phase Flow, *11 Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2014.
155. Mema, E., Cummings, L., Kondic, L., Substrate induced gliding effect in a nematic liquid crystal layer, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2014.
156. Kovalcinova, L., Goullet, A., Kondic, L., Properties of force networks of slowly compressed granular matter, *11th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2014.
157. Seric, I., Afkhami, S., Kondic, L., Interfacial instability in thin ferrofluid films under a magnetic field, *11th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2014.
158. Mahady, K., Afkhami, S., Kondic, L., Contact angles and thin film rupture: Volume of fluid based simulations, *11th Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2014.
159. Dong, N., Wu, Y., Fowlkes, J., Rack, P., Kondic, L., Formation of drops from structured metal geometries on nanoscale, *11 Conference on Frontiers in Applied and Computational Mathematics*, Newark, NJ, May 2014.
160. Kondic, L., Dong, N., Wu, Y., Fowlkes, J., Rack, P., How geometry influences instability of liquid metals on nanoscale, *WE-Heraeus Seminar on Wetting of structures with complex*

geometries, Bad Honnef, Germany, March 2014.

161. Kondic, L., Kramar, M., Goullet, A., Mischaikow, M., Evolution of force networks in dense granular matter, *March Meeting of the American Physical Society,* Denver, CO, March 2014.
162. Kovalcinova, L., Goullet, A., Kondic, L., Characterizing dense granular systems by percolation and statistical properties of force networks, *March Meeting of the American Physical Society,* Denver, CO, March 2014.
163. Clark, A., Peterson, A., Kondic, L., Behringer, R.P., Effect of Mach number on granular impacts, *March Meeting of the American Physical Society,* Denver, CO, March 2014.
164. Dong, N., Wu, Y., Fowlkes, J., Rack, P., Kondic, L., Instabilities of structured liquid metal geometries on nanoscale, *March Meeting of the American Physical Society,* Denver, CO, March 2014.
165. Hein, M., Afkhami, S., Kondic, L., Seemann, R., Capillary focusing: New breakup regime in step-emulsification, *Spring Meeting of the German Physical Society,* Dresden, Germany, March 2014.
166. Fowlkes, J., Diez, J., Gonzalez, A., Kondic, L., Mahady, K., Afkhami, S., Wu, Y., Roberts, P. D., Hartnett, C., Rack, P., The liquid phase assembly of metallic nanoparticle arrays using nanolithography and pulsed laser melting, *SPIE Photonics West*, San Francisco, CA, February 2014.
167. Kondic, L., Kramar, M., Goullet, A., Mischaikow, M., Statics and Dynamics of Force Networks in Dense Particulate Systems, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
168. Seric, I., Afkhami, S., Kondic, L., Numerical simulations of a ferrofluid drop on a substrate under an applied magnetic field, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
169. Mahady, K., Afkhami, S., Kondic, L., Influence of Geometry on Instability: Breakup of fluid strips with square-wave perturbations, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
170. Afkhami, S., Hein, M., Seemann, R., Kondic, L., Computational and experimental investigation of capillary self-focusing in a microfluidic system, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
171. Lam, M., Cummings, L, Lin, T-S., Kondic, L., Modeling flow of nematic liquid crystal down an incline, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
172. Diez, J., Gonzalez, A., Kondic, L., Theoretical models for the stability of a liquid ring on a substrate, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
173. Diez, J., Wu, Y., Fowlkes, J., Rack, P.D., Kondic, L., Using instability of nanometric liquid Cu films on SiO2 substrates to determine the underlying van der Waals potential, *American Physical Society Division of Fluid Mechanics Annual Meeting,* Pittsburg, PA, November 2013.
174. Fuentes-Cabrera, M., Fowlkes, J., Kondic, L., Diez, J., Gonzalez, A. Nguyen, T., Rack P., Large-Scale Molecular Dynamics Study of Dewetting of Thin Liquid Films On Solid Substrates, *AICHE Annual Meeting,* San Francisco, CA, November 2013.
175. Kyle, M., Afkhami, S., Kondic, L., A Numerical Study of Nanoscale Drop Assembly via Square-wave Breakup, *SIAM Meeting on Mathematical Aspects of Material Science*, Philadelphia, PA, June 2013.
176. Kondic, L., Afkhami, S., Stability of liquid rings, *SIAM Meeting on Mathematical Aspects of Material Science*, Philadelphia, PA, June 2013.
177. Cummings, L., Lin, T-S., Kondic, L., Stability of Nematic Liquid Crystal Films and Drops, *SIAM Meeting on Mathematical Aspects of Material Science*, Philadelphia, PA, June 2013.
178. Lam, M., Lin, T-S., Cummings,, L., Kondic, L., Thin Film Nematic Liquid Crystal Down an Incline Substrate: Two Dimensional Flow, *Frontiers in Applied and Computational*

Mathematics, Newark, NJ, June 2013.

179. Cai, C., Cummings, L., Kondic, L., Bifurcation Properties of Nematic Liquid Crystals Exposed to an Electric Field: Switchability, Bistability and Multistability, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2013.
180. Seric, I., Afkhami, S., Kondic, L., Long-wave Approximation of a Ferrofluid Film under an External Magnetic Field, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2013.
181. Kyle, M., Afkhami, S., Kondic, L., Combined Mesoscopic-Macroscopic Computations of Thin Films and Contact Lines, *Frontiers in Applied and Computational Mathematics*, Newark, NJ, June 2013.
182. Lin, T-S., Thiele, U., Cummings, L., Kondic, L., Hydrodynamic description of thin nematic films, Mathematical Modeling and Analysis of Complex Fluids and Active Media in Evolving Domains, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, May 2013.
183. Diez, J., Gonzalez A., Wu, Y., Fowlkes, J., Rack, P.D., Kondic, L., Rupture of liquid Cu films on SiO_2 substrates, *XIII Surfaces and Nanostructures Workshop,* Mar del Plata, Argentina, May 2013.
184. Nguyen, T., Fuentes-Cabrera, M., Fowlkes, J., Diez, J.. Gonzalez, A., Kondic, L., Brown, L. W., Rack, P., Dewetting of nanometer-sized thin films on a solid substrate: A large-scale simulation study, *American Physical Society March Meeting*, Baltimore, MD, March 2013.
185. Kondic, L., Diez, J., Gonzalez, A. Nguyen, T., Fuentes-Cabrera, M. Fowlkes, J., Rack P., Nanometric rings: Molecular dynamics and continuum modeling, *BIRS Workshop on Thin Liquid Films and Fluid Interfaces: Models, Experiments, and Applications*, Banff, Alberta, Canada, December 2012.
186. Kondic, L, Gonzalez, A., Diez, J., Fowlkes, J, Wu, Y., Roberts C., McCold, C., Rack, P., Linear structures of nanodrops generated from patterned filaments, *BIRS Workshop on Thin Liquid Films and Fluid Interfaces: Models, Experiments, and Applications*, Banff, Alberta, Canada, December 2012.
187. Clark, A., Kondic, L., Behringer, R.P., What is the granular response to a high-speed impact? *Bull. Amer. Phys. Soc.*, **57**, 752, San Diego, CA, November 2012.
188. Lin, T-S., Kondic, L., Instabilities in thin hanging films, *International Focus Workshop on Multiscale Complex Fluid Flows and Interfacial Phenomena,* Dresden, Germany, November 2012.
189. Cummings, L., Lin, T-S., Kondic, L., New models and simulations for flow of nematic liquid crystal, *International Focus Workshop on Multiscale Complex Fluid Flows and Interfacial Phenomena,* Dresden, Germany, November 2012.
190. Diez, J., Gonzalez, A., Nguyen, T., Fuentes-Cabrera, M., Fowlkes, J., Rack, P., Kondic, L., Anillos nanométricos: Dinamica molecular y teoría del continuo, *Division of Fluid Mechanics of Argentine Physical Society Annual Meeting,* Buenos Aires, Argentina, November 2012.
191. Gonzalez, A., Diez, J., Fowlkes, J., Wy, Y., Roberts, N., Rack, P., Kondic, L., Estructuras lineales de nanogotas a partir de filamentos conformados, *Division of Fluid Mechanics of Argentine Physical Society Annual Meeting,* Buenos Aires, Argentina, November 2012.
192. Wu, Y., Fowlkes, J., Kondic, L, Diez, J., Roberts, N., Rack, P., The Self- and Directed Assembly of Metallic Nanoparticle Rings by Nanolithography and Pulsed Laser Induced Dewetting, *59th International American Vaccum Society Symposium,* Tampa, FL, October 2012.
193. Lin, T., Cummings, L., Kondic, L., Modeling of three dimensional nematic droplets, *International Liquid Crystal Conference (ILCC 2012),* Mainz, Germany, August 2012.
194. Kondic, L., Goullet, A., Kramar, M., Mischaikow, K., Behringer, R.P., On Microstructure of Particulate Matter Exposed to Impact and Compression, *8th European Solid Mechanics Conference (ESMC 2012),* Graz, Austria, July 2012.
195. Kramar, M., Mischaikow, K., Kondic, L., Goullet, A., Behringer, R.P., Dynamics of granular

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