CURRICULUM VITAE
FERNANDO PERUANI

Laboratoire J.A.Dieudonné (UMR 7351, CNRS UNS)
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EDUCATION

- Habilitation à Diriger des Recherches (HDR) at Université Nice Sophia Antipolis, France (2018)
  Subject: "Active Matter and Applications"
  Jury: Eric Clement, Gerhard Gompper, Philippe Peyla (rapporteurs), Leticia Cugliandolo (President), Thomas Frisch, Thierry Goudon, Xavier Noblin (examinateurs).
- PhD at the Max Planck Institute for the Physics of Complex Systems and the Technische Universität Berlin. Germany. (2004 – 2008)
  Subject: "From individual to collective motion of self-propelled particles: The role of particle shape, orientational ordering and clustering"
  Dissertation: January 2008. Mark: "sehr gut". Supervisor: Prof. Dr. Markus Bär (co-supervisor: Prof. Dr. Andreas Deutsch).
  [PhD thesis selected by ESMTB committee as one of the best theses of 2008]
- Studies in Physics at the University of Buenos Aires, Argentine. (2003)
  Final research project: "Stochastic models for the dielectric breakdown"

ACADEMIC APPOINTMENTS

- 2016: Appointed "Group Leader of Computational and System Biology" at the Center of Integrative Biology (CBI) of Toulouse, France. [This position was never materialized due unexpected budget cutting experienced by CBI of Toulouse].
- 2014: Invited professor. Physics School. University of Buenos Aires, Argentina.
- 2012-present: Tenured Assist./ Assoc. professor (maître de conferences). Laboratoire J.A. Dieudonné UMR 7351. Université de Nice Sophia Antipolis.
- 2011-2012: Assistant professor (maître de conferences stagiaire). Laboratoire J.A. Dieudonné UMR 7351. Université de Nice Sophia Antipolis.
- 2010-2011: Post-doctoral fellow at the Max Planck Institute for the Physics of Complex Systems, Dresden. Germany.
- 2008-2010: Post-doctoral fellow at the CNRS and CEA, Paris and Saclay. France.

HONORS & SCHOLARSHIPS

- Invited Professor, University of Buenos Aires (July and August) (2014), Argentina.
- KITP visitor (for 2 months), Santa Barbara (2014), USA.
- Isaac Newton Institute visitor (for 2 months), Cambridge (2013), UK.
- Max Planck post-doctoral fellowship (2010-2011), Germany.
- CEA post-doc fellowship (2009), France.
- CNRS post-doc fellowship (2008), France.
- PhD Scholarship between MPIPKS and TU Dresden (2004-2008), Germany.
- "Honor diploma" (2003), University of Buenos Aires, Argentina.
- Young researcher scholarship UBACyT (2002), Argentina.

GRANTS

- PI of Project: "Physics of Bacterial Infections", funding Biocodex, 2017-2018 (130 kE)
- PI of ANR JC "PhysBact" 2015-2019 (300 kE)
- PI of "The physics of bacterial infection" research project co-funded by Biocodex and Ins. Doeblin (14 kE).
- Partner of the Project 2013-2015: "Chemical regulation of aggregation and pattern formation of gliding bacteria" (providing funding for 1 PhD).
- PI of the CNRS Project 2012: "Anomalous fluctuations in the collective motion of self-propelled particles" (4 kE).

MASTER STUDENTS, PHD STUDENTS & POSTDOCS

Master Students

- Diego Bengochea (3.2018-8.2018)
  Subject: "Excitations in active systems"
- Stefan Otte (Erasmus+, 15 months research project, Univ. Nice Sophia Antipolis & TU Dresden) (8.2015 – 1.2017)
  Subject: "Characterization and modelling of bacterial swimming close to a surface"
- Clémentine Chen-Huard (Master (M2), Univ. Nice Sophia Antipolis & Univ. Paul Sabatier, Toulouse III, co-direction with Richard Bon)
  Subject: "Familiarity effects in the collective motion of sheep herds"
- Vincent Ravera (6 months research project, funding Biocodex, Univ. Nice Sophia Antipolis)
  Subject: "Mathematical modelling of swimming bacteria" (1/2015 – 7/2015)

Phd Students

- Hadrien Gascuel (PhD student in co-direction with Richard Bon, Université Paul Sabatier, Toulouse III, France)
  Subject: "Information spreading and collective decision-making"
  Dissertation: expected in Oct. 2020
- Luis Alberto Gomez Nava (PhD student).
  Subject: "Collective motion and self-organized patterns in animal groups".
  Dissertation: expected in July 2018
- Sylvain Toulet (PhD student in co-direction with Richard Bon, Université Paul Sabatier, Toulouse III, France).
  Subject: "Self-organized collective migrations in vertebrates: information transfer and individual decision".

Dissertation: October 2015

- Oleksandr Chepizkho (PhD student in co-direction with Vladimir Kulinski, University of Odessa, Ukraine, 2 years stage in Nice under my supervision)
  Subject: "Kinetic models for self-propelled particle systems".
  Dissertation: December 2014

Postdocs

- Robert Grossmann (10/2016 – 10/2018)
  Subject: "Active matter theory"
- Emiliano Peres Ipiña (4/2016 – 4/2018)
  Subject: "Modeling of multicellular organization in bacteria"
- Lucas Barberis (post-doc 9/2013 – 12/2014)
  Subject: "Collective patterns with attraction"
- Guillermo Terranova (post-doc 3/2012 – 9/2012)
  Subject: "Transport properties in self-propelled discs systems".

ORGANIZED WORKSHOPS

- Workshop "From Active to Complex Flows", Nice, France, January 2018. Funding from EU COST action program MP1305. Co-organized with Giovanni Volpe, Giorgio Volpe, and Alvaro Marin.
- CECAM workshop "Biomimetic and living materials: active matter at high densities", Lausanne, Switzerland, December 2016. Funding from EU organization CECAM. Co-organized with Oleksandr Chepizhko and Hugues Chaté.
- Dynamics of passive and active particles: transport and collective phenomena. Nice, France. December 2013. Funding from Doeblin Institute, Nice. Co-organized with Dario Vincenzi, Pavel Kuhzir and Stefano Musacchio.
- Dynamics on and of complex networks 11, satellite workshop of ECCS11. Vienna, Austria. September 2011. Co-organized with N. Ganguly, A. Mukerjee, B. Mitra, and M. Chaudhuri.
- Dynamics on and of complex networks 10, satellite workshop of ECCS10. Lisbon, Portugal. September 2010. Co-organized with N. Ganguly, A. Mukerjee, and M. Chaudhuri.
- Dynamics on and of complex networks 09, satellite workshop of ECCS09. Warwick, UK. September 2009. Co-organized with N. Ganguly, A. Deutsch, and E. Fleury.
- Dynamics on and of complex networks 08, satellite workshop of ECCS08. Jerusalem, Israel. September 2008. Co-organized with N. Ganguly and A. Deutsch.

TEACHING EXPERIENCE

- Lecture on Dynamical Systems (of 50 hours), Université Nice Sophia Antipolis (UNS), France. Level: Third year undergraduates in Physics (fall 2018, fall 2017, fall 2016, fall 2015, fall 2014, fall 2013).
- Lecture on Non-equilibrium Statistical Physics (of 50 hours [theory+exercises]), UNS. Level: Master students in either Physics or Mathematics (spring 2017, spring 2016, spring 2015, spring 2014, spring 2013)
- Lecture on Active Soft-Matter (of 35 hours), University of Buenos Aires. Level: PhD students in either Physics or Mathematics (July & August 2014)
- Lecture on Thermodynamics (20 hours), UNS. Level: second and third year undergraduates, Physics (fall 2014, fall 2013, fall 2012, spring 2012, fall 2011).
- Lecture on Physics for Biology (of 15 hours), UNS. Level: first year undergraduates in Biology (spring 2014, spring 2013, spring 2012).

- Lecture on “Collective motion” (of 25 hours), UNS. Level: master students in Physics (fall 2011).
- Teaching Assistant of classical mechanics, Universidad de Buenos Aires, Argentina. (From March 2002 to July 2003).

INVITED TALKS, SEMINARS, and LECTURES

More than 50 invited talks and seminars. The list below includes only those since 2013:

- Invited talk at conference “Dynamics Days Europe”. Loughborough, UK, Sept. 2018. Title: TBA.
- Invited seminar series at BioMat School. Córdoba, Argentina, July 2018. Title: TBA.
- Invited talk at Conf. “Modélisation stochastique et l’analyse statistique en biologie”, Tours, France. Title: TBA
- Invited seminar at “School on Physics Application in Biology”. Sao Paulo, Brazil, Jan. 2018. Title: “Collective motion in sheep”.
- Invited talk at CIESM workshop. Paris, France, Nov. 2017. Title: “Correlating bacterial motility and infection capacity”
- Invited talk at workshop “Multiscale analysis and modeling of collective migration in biological systems”. Bielefeld, Germany, Oct. 2017. Title: “Collective motion in sheep”.
- Invited talk at the XXVI International Materials Research Congress. Cancun, Mexico. August 2017. Title: “Flocking without velocity alignment”.
- Invited talk at the 9th International Conference of Engeneering of Chemical Complexity. Barcelone, Spain, June 2017. Title: “Active Particles in Heterogeneous media”
- Invited talk at workshop “Synergy of Fluctuation and Structure. Quest for Universal Laws in Non-Equilibrium Systems”. Tokyo, Japan, October 2016. Title: “From orientational order to topological defects and from self-propelled rods to active nematics”
- Invited talk at WE-Heraeus Seminar “Patterns in Nature – Functions, Variations and Control”. Bayreuth, Germany, October 2016. Title: “Large-scales patterns in a minimal cognitive flocking model: incidental leaders, nematic patterns, and aggregates”
- Invited talk at the 2nd BCAM Workshop on Nonlinear Dynamics in Biological Systems. Bilbao, Spain, September 2016. Title: “Large-scales patterns of position-based interacting active particles: incidental leaders, nematic patterns, and aggregates
- Invited lecture (3x1h) IASBS-ICTP School in Active Matter and Chemotaxis. Zanjan, Iran, May 2016. Title: “From Bacteria to Sheep: Active Fluctuations, Collective Patterns, and Active Particles in Heterogeneous Media”.
- Invited seminar at the Centre de Biologie Intégrative, Toulouse, France, May 2016. Title: “Collective effects in bacteria: a physical approach to a biological problem”
- Invited talk at workshop “WE-Heraeus-Seminar: Quantifying complex transport with Lévy walks: from cold atoms to humans and robots”, Bad-Honnef, Germany, May 2016. Title: Sub-diffusion and super-diffusion in active matter systems
- Invited talk at conference “Fluid mechanics and collective behavior: from cells to organisms”, Ascona, Switzerland, April 2016. Title: “Collective motion of sheep herds”
- Invited lecture at summer school “Microswimmers: from simple particle motion to collective behavior”. Juelich, Germany, September 2015. Title: “The physics of self-propelled rods”.
- Invited lecture Aux Rencontres de Peyresq, Peyresq, France, Juin 2015. Title: Matière active et mouvements collectifs
- Invited talk at “Collective dynamics in biology, physics, and social sciences”. Dublin, Ireland, May 2015. Title: “Density waves and collective decision-making in sheep”.

- Invited talk at “Physics of Active Matter”. Suzhou, China, May 2015. Title: “Active particles in heterogeneous media”
- Invited talk at “Experimental flowing matter”. Ankara, Turkey, May 2015. Title “Active particles in confinement”
- Invited talk at CompMat conference. White Haven, UK. September 2014. Title: “Active particles in confinement and in heterogeneous media”.
- Invited lecture (3x1h) at BioMat workshop. Córdoba, Argentina. August 2014. Title: “An introduction to active soft matter”.
- Invited talk at WE Heraus workshop “Statistical Physics of self-propelled particles”. Bad Honnef, Germany. June 2014. Title: “Active particles in heterogeneous media”.
- Invited seminar at Muenster University. Muenster, Germany. June 2014. Title: “What is active matter?”.
- Invited lecture at the Spring School of “La Société Francophone de Biologie Théorique”. Saint Flour, France. May 2014. Title: “La modélisation de l'auto-organisation bactérienne sans chimiotactisme, un changement de paradigme pour comprendre le vivant: la matière active”.
- Invited plenary talk at session “Physics of Behavior” of the annual APS Conference (APS March Meeting). Denver, USA. March 2014. Title: “Bacteria as self-propelled liquid crystals”.
- Invited seminar at the Kavli Institute for Theoretical Physics. Santa Barbara, USA. February 2014. Title: “Active particles in heterogeneous media”.
- Invited talk at workshop “Non-standard Transport Processes”. Lyon, France. September 2013. Title: “Diffusion and sub-diffusion of active particles in heterogeneous media”.
- Invited seminar at Isaac Newton Institute. Cambridge, UK. July 2013. Title: “From bacteria to collective motion in heterogeneous media”.
- Invited seminar at Imperial College London. London, UK. July 2013. Title: “From bacteria to collective motion in heterogeneous media”.
- Invited talk PCA workshop: “Theory, Application, and future perspectives”. Eindhoven, Netherlands. June 2013. Title: “Optimal noise maximizes collective motion in heterogeneous media”.
- Invited plenary talk at session “Networks over time” in NetSci conference. Denmark, Copenhagen. June 2013. Title: “Information flow in mobile phone communication networks”.
- Invited naXys seminar at Université de Namur. Namur, Belgium. May 2013. Title: “Fluctuations in epidemic models: from complex networks to lattice models, and from mean-field approaches to field equations”.

REFERENCES

Igor Aranson
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Publication list

Fernando Peruani

60 publications: 50 [45 published + 5 submitted] in international journals; 5 in proceedings (with peer-review process); 4 book chapters; 1 book.

Bibliometrics:
Citations >2200; h-index 23; index-i10: 39

International journals:

Submitted:
[preprints available upon request if not already available on arXiv repository]

1. E. Perez-Ipiña, S. Otte*, R. Pointer-Bres, D. Czerucka, **F. Peruani**, "Enterohemorrhagic *Escherichia coli* displays optimal transport near surfaces", submitted (2018)

2. S. Otte*, E. Perez-Ipiña*, R. Pointer-Bres, D. Czerucka, **F. Peruani**, "*Salmonella Typhimirium* in the search of host cells", submitted (2018).

3. **F. Peruani**, G. Sibona, "Chemical reactions among self-propelled particles: ballistic vs. diffusive spreading", submitted (2018)

4. O. Chepizhko, D. Saintillan, **F. Peruani**, "*Is living and non-living active matter equivalent?*", submitted (2018).

5. E. Perez-Ipiña, R. Pointer-Bres, D. Czerucka, **F. Peruani**, "Using physical obstacles hinder bacterial infections", submitted (2018)

Published:

6. P. Amorim, T. Goudon, **F. Peruani**, "An ant navigation model based on Weber's law", to appear in Journal of Mathematical Biology (2018)

7. **F. Peruani** and I. Aranson, "Cold Active Matter: How Time-Independent Disorder Affects the Motion of Self-Propelled Agents", to appear Phys. Rev. Lett. 120, 238101 (2018)
[The paper has been selected by Phys. Rev. Lett. as "Editor's suggestion"]

8. L. Gómez-Nava, R. Grossmann, **F. Peruani**, "Markovian microrobots: minimal navigation strategies for active particles", Phys. Rev. E *97, 042604* (2018).

9. M. Hintsche, V. Waljor, R. Grossmann, M.J. Kuhn, K.M. Thormann, **F. Peruani**, C. Beta, "A polar bundle of flagella can drive bacterial swimming by pushing, pulling, or coiling around the cell body", Scientific Reports 7, 16771 (2017).
http://dx.doi.org/s41598-017-16428-9

10. **F. Peruani**, "Hydrodynamic equations for flocking models without alignment", J. Phys. Soc. Jpn. 86, 101010 (2017).
https://doi.org/10.7566/JPSJ.86.101010

11. J. Nava, L. Brusch, **F. Peruani**, A. Deutsch, Extracting cellular automaton rules from physical Langevin equations models for single and collective cell migration", Journal of Mathematical Biology, 1-26 (2017).
http://dx.doi.org/10.1007/s00285-017-1106-9

12. L. Barberis and **F. Peruani**, "Large-scale patterns in a minimal cognitive flocking model: Incidental leaders, nematic patterns, and aggregates", Phys. Rev. Lett.117, 248001 (2016)
http://dx.doi.org/10.1103/PhysRevLett.117.248001
[Read the Synopsis: "Flocks Without Memory" by Matteo Rini in *Physics* (http://physics.aps.org/synopsis-for/10.1103/PhysRevLett.117.248001) -- the article was covered in other news outlets as well, e.g. (https://nplus1.ru/news/2016/12/13/school-of-fish-flock-of-bird)]

13. R. Grossmann, **F. Peruani**, M. Bär, "Mesoscale pattern formation of self-propelled rods with velocity reversal", Phys. Rev. E 94, 050602 (Rapid Comm) (2016)
https://doi.org/10.1103/PhysRevE.94.050602

14. R. Grossmann, **F. Peruani**, M. Bär, "Superdiffusion, large-scale synchronization, and topological defects", Phys. Rev. E 93, 040102(R) (2016).
http://dx.doi.org/10.1103/PhysRevE.93.040102

15. **F. Peruani**, "Active Brownian Rods", Eur. Phys. J. Spec. Top. (2016) 225: 2301.
http://dx.doi.org/10.1140/epjst/e2016-60062-0

16. R. Grossmann, **F. Peruani**, M. Bär, "Diffusion properties of active particles with directional reversal", New J. Phys. 18 043009 (2016)
http://dx.doi.org/10.1088/1367-2630/18/4/043009
[Read a Perspective on this work by Carsten Beta in *IOP Science* (http://iopscience.iop.org/article/10.1088/1367-2630/18/5/051003/meta)]

17. F. Ginelli*, **F. Peruani***, M. Pillot, H. Chaté, G. Theraulaz, R. Bon, "Intermittent collective dynamics emerge from conflicting imperatives in sheep herds", Proc. Nat. Acad. Sci. **112**, 12729-12734 (2015).
http://dx.doi.org/10.1073/pnas.1503749112
[Read a broad audience synopsis on this work in *"Pour la Science" magazine* (http://www.pourlascience.fr/ewb_pages/a/actu-le-mouton-de-panurge-une-reputation-qui-se-confirme-36174.php); the work received coverage in several newspapers]

18. S. Toulet, J. Gautrais, R. Bon, and **F. Peruani**, "Decision-making for collective motion results in an all-or-none response in sheep", PLoS ONE **10**(10): e0140188 (2015).
http://dx.doi.org/10.1371/journal.pone.0140188

19. S. Weitz, A. Deutsch, and **F. Peruani**, "Giant aggregates and absence of global orientation in self-propelled rods", Phys. Rev. E **92**, 012322 (2015).
http://dx.doi.org/10.1103/PhysRevE.92.012322

20. A. Bricard, J-B. Causin, D. Das, C. Savoie, V. Chikkadi, K. Shitara, O. Chepizhko, **F. Peruani**, D. Santillan, and D. Bartolo, "Emergent vortices in populations of colloidal rollers", Nature Comm. 6, **7470** (2015).
http://dx.doi.org/10.1038/ncomms8470

21. O. Chepizhko and **F. Peruani**, "Active particles in heterogeneous media display new physics:

existence of an optimal noise and absence of bands and long-range order", Eur. Phys. J. Special Topics **224**, 1287-1302 (2015).
http://dx.doi.org/ 10.1140/epjst/e2015-02460-5

22. R. Grossmann, **F. Peruani**, M. Baer, "A geometric approach to self-propelled motion in isotropic & anisotropic environments", Eur. Phys. J. Special Topics **224**, 1377-1397 (2015).
http://dx.doi.org/ 10.1140/epjst/e2015-02465-0

23. J. Barré, R. Chetrite, M. Muratori, and **F. Peruani**, "Motility-induced phase separation of active particles in the presence of velocity alignment", J. Stat. Phys. **158**, 589/600 (2015).
http://dx.doi.org/ 10.1007/s10955-014-1008-9

24. O. Chepizhko and **F. Peruani**, "Diffusion, subdiffusion, and trapping of active particles in heterogeneous media", Phys. Rev. Lett. **111**, 160604 (2013)
http://dx.doi.org/10.1103/PhysRevLett.111.160604

25. N. Ganguly, S. Saha, A. Maiti, S. Agarwal, **F. Peruani**, A. Mukherjee, "Effect of attachment strategies on bipartite networks", Eur. Phys. J. B **86**, 287 (2013)
http://dx.doi.org/10.1140/epjb/e2013-30662-x

26. **F. Peruani** and M. Bär, "A kinetic model and scaling properties for non-equilibrium clustering of self-propelled particles", New J. Phys. **15**, 065009 (2013)
http://dx.doi.org/10.1088/1367-2630/15/6/065009

27. O. Chepizhko. E. Altmann, and **F. Peruani**, "Optimal Noise Maximizes Collective Motion in Heterogeneous Media", Phys. Rev. Lett. **110**, 238101 (2013)
http://dx.doi.org/10.1103/PhysRevLett.110.238101

28. **F. Peruani** and C.F. Lee, "Fluctuations and the role of collision duration in reaction-diffusion systems", Europhys. Lett. **102**, 58001 (2013)
http://dx.doi.org/10.1209/0295-5075/102/58001

29. J. Starruss*, **F. Peruani***, V. Jakovljevic, L. Soogard-Andersen, A. Deutsch, and M. Bär, "Pattern-formation mechanisms in motility mutants of Myxococcus xanthus", Interface Focus vol. **2** no. **6** 774-785 (2012)
http://dx.doi.org/10.1098/rsfs.2012.0034

30. A. Srivastava, B. Mitra, N. Ganguly, and **F. Peruani**, "Correlations in complex networks under attack", Phys. Rev. E **86**, 036106 (2012).
http://dx.doi.org/10.1103/PhysRevE.86.036106

31. **F. Peruani**, J. Starruss, V. Jakovljevic, L. Sogaard-Andersen, A. Deutsch, and M. Bär, "Collective motion and nonequilibrium cluster formation in colonies of gliding bacteria", Phys. Rev. Lett., **108**, 098102 (2012)
http://dx.doi/org/10.1103/PhysRevLett.108.098102

32. **F. Peruani** and L. Tabourier, "Directedness of information flow in mobile phone communication networks", PLoS ONE 6, e28860 (2011)
http://dx.doi.org/10.1371/journal.pone.0028860

33. **F. Peruani**, F. Ginelli, M. Bär, and H. Chaté, “Polar vs. apolar alignment in systems of polar self-propelled particles”, J. Phys.: Conf. Ser. 297, 012014 (2011)
http://dx.doi.org/10.1088/1742-6596/297/1/012014

34. **F. Peruani**, T. Klauss, A. Deutsch, and A. Voss-Boehme, “Traffic jams, gliders, and bands in the quest for collective motion”, Phys. Rev. Lett. 106, 128101 (2011)
http://dx.doi.org/10.1103/PhysRevLett.106.128101

35. **F. Peruani**, L. Schimansky-Geier, and M. Bär, “Cluster dynamics and cluster size distributions in systems of self-propelled particles”, Eur. Phys. J. Special Topics 191, 173-185 (2010)
http://dx.doi.org/10.1140/epjst/e2010-01349-1

36. **F. Peruani**, E. Nicola, L. Morelli, “Mobility induces global synchronization of oscillators in extended systems”, New J. Phys. 12, 093029 (2010).
http://dx.doi.org/10.1088/1367-2630/12/9/093029

37. F. Ginelli, **F. Peruani**, M. Bär and H. Chaté, “Large-scale properties of a simple model for self-propelled rods”, Phys. Rev. Lett. 104, 184502 (2010) (2010)
http://dx.doi.org/10.1103/PhysRevLett.104.184502

38. M. Choudhury, N. Ganguly, A. Maiti, A. Mukherjee, L. Brusch, A. Deutsch, **F. Peruani**, "Modeling discrete combinatorial systems as Alphabetic Bipartite Networks: Theory and Applications", Phys. Rev. E 81, 036103 (2010).
http://dx.doi.org/10.1103/PhysRevE.81.036103

39. **F. Peruani**, A. Maiti, S. Sadhu, H. Chaté, R. Choudhury, and N. Ganguly, “Delay Tolerance Networks with Omnidirectional and Directional Antenna”, IEEE Journal on Selected Areas in Communication 28, 524-531 (2010).
http://dx.doi.org/10.1109/JSAC.2010.100502

40. H. Chaté, F. Ginelli, G. Gregoire, **F. Peruani**, and F. Raynaud, "Modeling Collective Motion: Variations on the Vicsek model", Eur. Phys. J. B 64, 451 (2008).
http://dx.doi.org/10.1140/epjb/e2008-00275-9

41. B. Mitra, N. Ganguly, S. Ghose and **F. Peruani**, "Stability Analysis of Peer-to-Peer Networks Against Churn", Pramana - J. Phys. 71, 263 (2008).
www.ias.ac.in/pramana/v71/vol71.pdf

42. B. Mitra, N. Ganguly, S. Ghose and **F. Peruani**, "Generalized theory for node disruption in finite complex networks", Phys. Rev. E 78, 026115 (2008).
http://dx.doi.org/10.1103/PhysRevE.78.026115

43. **F. Peruani** and G. Sibona, "Dynamics and Steady States in Excitable Mobile Agent System", Phys. Rev. Lett. 100, 168103 (2008).
http://dx.doi.org/10.1103/PhysRevLett.100.168103

44. **F. Peruani**, A. Deutsch, M. Bär, “Mean field theory for the collective motion of self-propelled particles interacting by velocity alignment mechanisms”, European Physical Journal - Special Topics 157, 111 (2008).
http://dx.doi.org/10.1140/epjst/e2008-00634-x

45. **F. Peruani** and Luis G. Morelli, “Self-propelled particles with fluctuating speed”, Phys. Rev. Lett. 99, 010602 (2007).
http://dx.doi.org/10.1103/PhysRevLett.99.010602

46. **F. Peruani**, M. Choudhury, A. Mukherjee, N. Ganguly, “Emergence of a non-scaling degree distribution in bipartite networks: a numerical and analytical study”, Europhys. Lett. 79, 28001 (2007).
http://dx.doi.org/10.1209/0295-5075/79/28001

47. **F. Peruani**, A. Deutsch, M. Bär, “Nonequilibrium clustering of self-propelled rods”, Phys. Rev. E, 74, 030904 (2006). Rapid Communications.
http://dx.doi.org/10.1103/PhysRevE.74.030904

48. G. Solovey, **F. Peruani**, S. Ponce Dawson, R. M. Zorzenon dos Santos, “On cell resistance and immune response time lag in a model for HIV infection”, Physica A 343, 543 (2004).
http://dx.doi.org/10.1016/j.physa.2004.06.068

49. P. Bergero, **F. Peruani**, G. Solovey, I.M. Irurzun, J.L. Vicente, E. E. Mola, “Dielectric breakdown model for conductor-loaded and insulator-loaded composite materials”. Physical Review E, 69, 016123 (2004).
http://dx.doi.org/10.1103/PhysRevE.69.016123

50. **F. Peruani**, G. Solovey, I.M. Irurzun, E. E. Mola, A. Marzocca, J.L. Vicente, “Dielectric breakdown model for composite materials”, Physical Review E, 67, 066121 (2003).
http://dx.doi.org/10.1103/PhysRevE.67.066121

[* = equally contributed]

Proceedings (with peer-review process)

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