CURRICULUM VITAE
FERNANDO PERUANI

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EDUCATION and PROFESSIONAL EXPERIENCE

- Invited professor. Physics School. University of Buenos Aires, Argentina (July and August 2014)
- Visiting fellow at the Kavli Institute for Theoretical Physics, University of California Santa Barbara, USA (February and March 2013).
- Visiting fellow at the Isaac Newton Institute, Cambridge University, United Kingdom (July and August 2013).
- (tenured) Assistant professor (maître de conférences). Laboratoire J.A. Dieudonné UMR 7351. Université de Nice - Sophia Antipolis. (Sept. 2011 – present)
- Post-doctoral fellow at the Max Planck Institute for the Physics of Complex Systems, Dresden. Germany. (Feb. 2010 – Sept. 2011)
- Post-doctoral fellow at the CNRS and CEA, Paris and Saclay. France. (Feb. 2008 – Feb. 2010)
- PhD at the Max Planck Institute for the Physics of Complex Systems and the Technische Universität Berlin. Germany. (Oct. 2003 – January 2008)
  Subject: "From individual to collective motion of self-propelled particles: The role of particle shape, orientational ordering and clustering"
  Dissertation: January 2008 at the Fakultaet II – Mathematik und Naturwissenschaften Technische Universität Berlin. Mark: "sehr gut". Supervisor: Prof. Dr. Markus Bär.
- Studies in Physics at the University of Buenos Aires, Argentine. (2003)
  Final research project: "Stochastic models for the dielectric breakdown"

HONORS & SCHOLARSHIPS

- Invited Professor, University of Buenos Aires (July and August) (2014), Argentina.
- Kavli Institute fellowship (for 2 months), University of California Santa Barbara (2014), USA.
- Isaac Newton Institute fellowship (for 2 months), Cambridge University (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 Max Planck Institute for the Physics of Complex Systems and Technische Universitaet Dresden (2003-2007), 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, 2016-2017 (120.000 Euros)
- PI of ANR JC "PhysBact" 2015-2019 (total project cost ~ 600.000)
- Supervisor/PI of "Characterization and modelling of bacterial swimming close to a surface" 2016, Erasmus+ project linked to student: Stefan Otte (~10.000 Euros)
- Supervisor/PI of "Collective motion and self-organized patterns in animal groups" PhD project funded by CONACyT Mexico linked to student: Luis Alberto Gomez Nava. (~36.000 Euros)
- PI of "The physics of bacterial infection" research project co-funded by Biocodex and Ins. Doeblin (14.000 Euros).
- PI together with A. Seminara of the Inst. Doeblin project 2014-2015 "Living at the edge: fluctuations of the border of a bacterial colony" (6.000 Euros)
- French node of the German DPG Project 2013-2018: "Chemical regulation of aggregation and pattern formation of gliding bacteria".
- PI of the CNRS Project 2012: "Anomalous fluctuations in the collective motion of self-propelled particles" (4.000 Euros).
- Partner of the CNRS-Inserm-Inria project 2012-2013: "Topology and symmetry of the interactions in animal collective motion". PI: Jacques Gautrais.
- Partner of the CNRS-Inserm-Inria project 2012-2013: "NeuroConf: Modelisation and simulation of realistic neuronal models". PI: Matthieu Lerasle.

ORGANIZED WORKSHOPS

- CECAM workshop "Biomimetic and living materials: active matter at high densities", Lausanne, Switzerland, December 2016. Co-organized with Oleksandr Chepizhko and Hugues Chaté.
- Dynamics of passive and active particles: transport and collective phenomena. Nice, France. December 2013. 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 (of 36 hours) on Dynamical Systems, UNSA. Level: Third year undergraduates in Physics (fall 2016)
- Lecture (of 35 hours) on Active Soft-Matter, University of Buenos Aires. Level: PhD students in either Physics or Mathematics (July & August 2014)
- Lecture (of 50 hours) on Irreversible Physics, UNSA. Level: Master students in either Physics or Mathematics (spring 2015, spring 2014, spring 2013)
- Lecture (of 20 hours) on Thermodynamics, UNSA. Level: second and third year undergraduates, Physics (fall 2014, fall 2013, fall 2012, spring 2012, fall 2011).

- Lecture (of 20 hours) on Non-linear dynamics, UNSA. Level: third year undergraduates in Physics (fall 2014, fall 2013, fall 2012).
- Lecture (of 15 hours) on Physics for Biology, UNSA. Level: first year undergraduates in Biology (spring 2014, spring 2013, spring 2012).
- Lecture (of 25 hours) on "Collective motion", UNSA. Level: master students in Physics (fall 2011).
- Teaching Assistant of classical mechanics, Universidad de Buenos Aires, Argentina. (From March 2002 to July 2003).

MASTER STUDENTS, PHD STUDENTS & POSTDOCS

Master Students

- 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

- Luis Alberto Gomez Nava (PhD student).
  Subject: "Collective motion and self-organized patterns in animal groups".
  Dissertation: expected in January 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".

INVITED TALKS, SEMINARS, and LECTURES

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

- Invited talk at "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 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

Markus Baer
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Lutz Schimansky-Geier
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Niloy Ganguly
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Email: niloy@cse.iitkgp.ernet.in

49 publications (39 in international journals [in 16 as first authors, in 11 as corresponding author, and 7 as co-author]; 5 in proceedings (with peer-review process); 4 book chapters; 1 book) + 3 submitted manuscripts to international journals (Total: 49).

International journals:

Submitted (preprints available upon request)

S. Otte, R. Pontier-Bres, D. Czerucka, **F. Peruani**, "Motility study reveal super-spreader bacteria", *submitted* (2016)

S. Toulet, J. Gautrais, J. Vicente-Page, **F. Peruani**, R. Bon, " A new tool to decipher metric versus topological interactions:application to sheep herds"
submitted (2016)

J. Nava, L. Brusch, **F. Peruani**, A. Deutsch, Extracting cellular automaton rules from physical Langevin equations models for single and collective cell migration"
submitted (2016)

Articles in International Journals

1. 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

2. R. Grossmann, **F. Peruani**, M. Bär, "Mesoscale pattern formation of self-propelled rods with velocity reversal", Phys. Rev. E 94, 050602 (Rapid Comm) (2016)

3. 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

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

5. 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

6. 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

7. 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

8. 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

9. 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

10. 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

11. 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

12. 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

13. 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

14. 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

15. **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

16. 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

17. **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

18. 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

19. 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

20. **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

21. **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

22. **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

23. **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

24. **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

25. **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

26. 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

27. 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

28. **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

29. 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

30. 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

31. 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

32. **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

33. **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

34. **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

35. **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

36. **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

37. 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

38. 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

39. **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

Proceedings (with peer-review process)

40. L. Tabourier, A. Stoica, and **F. Peruani**, "How to detect causality effects on large dynamical communication networks : a case study", Proceedings of ComsNets2012, Bengaluru, India. (2012).
http://dx.doi.org/10.1109/COMSNETS.2012.6151301

41. A. Srivastava, B. Mitra, **F. Peruani**, N. Ganguly, "Attacks on Correlated Peer-to-Peer Networks: An Analytical Study", SCNC 2011, The First IEEE International Workshop on Security in Computers, Networking and Communications in conjunction with IEEE INFOCOM (2011).
http://dx.doi.org/10.1109/INFCOMW.2011.5928787

42. G.J. Sibona, **F. Peruani**, G.R. Terranova, "Influence of the motion of individuals on the evolution of a SIRS epidemy", Proceedings of BIOMAT 2011 International Symp. on

Mathematical and Comp. Biology. Ed. R. Mondaini, World Scientific co (2011).

43. B. Mitra, **F. Peruani**, S. Ghose, and N. Ganguly, "Analyzing the Vulnerability of Superpeers Networks Against Attack", proceeding at CCS 07 (14th ACM Conference on Computer and Communications Security) (2007).
http://doi.acm.org/10.1145/1315245.1315274

44. B. Mitra, **F. Peruani**, S. Ghose, N. Ganguly,"Measuring robustness of Superpeer Topologies", Brief Announcement at PODC'07 (Twenty-Sixth Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing) (2007).
http://doi.acm.org/10.1145/1281100.1281179

Book chapters:

45. **F. Peruani**, "Active Brownian Rods", in: Microswimmers – from particle motion to collective behaviour, Jülich Forschungzentrum verlag (2015).

46. A. Chauvière & **F. Peruani**, "Auto-organisation et agrégation cellulaire sans chimiotactisme", in: Le vivant critique et chaotique (2015).

47. **F. Peruani**, "Advances in Complex Networks", in: Dynamics on and of Complex Networks: Applications to Biology, Computer Science, Economics, and the Social Sciences, Birkhauser-Springer, Boston (2009).
http://dx.doi.org/10.1007/978-0-8176-4751-3_16

48. J. Starruss, **F. Peruani**, M. Bär, A. Deutsch,"Bacterial swarming driven by rod shape", in: Mathematical Modeling of Biological Systems, Volume I: Cellular Biophysics, Regulatory Networks, Development, Biomedicine, and Data Analysis (2007).
http://www.springerlink.com/content/l4700168026u59t6/

Books:

49. M. Choudhuri, N. Ganguly, B. Mitra, A. Mukherjee, **F. Peruani** (2013) (eds.), "Time-varying dynamical complex networks", Birkhauser, Springer, Boston.

PhD Thesis:

F. Peruani. "From individual to collective motion of self-propelled particles: the role of particle shape, orientation ordering and clustering".
Deutsche Nationalbibliothek: http://deposit.ddb.de/cgi-bin/dokserv?idn=987576747