

ALLEGATO A

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di selezione per la chiamata a professore di II fascia da ricoprire ai sensi dell'art. 18, comma 1, della Legge n. 240/2010 per il settore concorsuale 02/A2 - FISICA TEORICA DELLE INTERAZIONI FONDAMENTALI, (settore scientifico-disciplinare FIS/02 - Fisica Teorica, Modelli e Metodi Matematici) presso il Dipartimento di DIPARTIMENTO DI FISICA "ALDO PONTREMOLI" (avviso bando pubblicato sulla G.U. n. 91 del 28/11/2017) - Codice concorso 3662

Sandro Azaele CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	AZAELE
NOME	SANDRO
DATA DI NASCITA	31.01.1973

INSERIRE IL PROPRIO CURRICULUM (non eccedente le 30 pagine)

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Education & Professional Qualifications

- 04/04/2017: Italian “**Abilitazione Scientifica Nazionale**” (02/D1 – FIS/07): Professore Associato.
- 02/02/2015: **Teaching Award** (Professional Standard 2, University of Leeds). I am a **Fellow** of "The Higher Education Academy". This is an official teaching degree awarded "in recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education".
- 13/03/2007: **Ph.D. in Physics** at the *University of Padova* (Italy).
Supervisor: Prof. Amos Maritan.
Dissertation title: “*Stochastic Equations for the Evolution of Ecosystems.*”
- 18/12/2002: **Graduation in Physics** (Laurea in Fisica, 110/110 magna cum laude) at the *University of Trieste* (Italy). Supervisor: Prof. GianCarlo Ghirardi. Thesis: “*Conceptual Aspects of Quantum Computation.*”

Employment

- 01/06/2014 – present: **Lecturer B in Applied Mathematics** (permanent position) at the University of Leeds (School of Mathematics), Leeds (UK). According to the Italian MIUR tables, this is equivalent to “professore associato”.
- 01/01/2016 – 24/06/2016: **Invited Visiting Fellow** of the *Isaac Newton Institute for Mathematical Sciences* (University of Cambridge) for the program “Stochastic Dynamical Systems in Biology: Numerical Methods and Applications”.
- 01/11/2012 – 31/05/2014: **Lecturer A in Applied Mathematics** (permanent position) at the University of Leeds (School of Mathematics), Leeds (UK).
- 01/11/2009 – 30/10/2012: **Post-doctoral Research Fellow** at the *University of Leeds* (Institute of Integrative and Comparative Biology, School of Biology), Leeds (UK). Supervisors: Prof. W. K. Kunin and Dr S. J. Cornell.
- 15/01/2007 – 30/09/2009: **Post-doctoral Research Associate** at *Princeton University* (School of Engineering and Applied Science), Princeton, NJ (USA). Supervisor: Prof. I. Rodriguez-Iturbe.

Teaching Experience and Recent Student Supervision

I scored (average) **4.6/5** in the final Student Surveys in 2016-17, one of the highest in the School of Mathematics (with some 80 academics). In 2015-16 I scored **5/5**, which has occurred very rarely in our School. My teaching scores are independent of the module I have taught and amongst the highest in the School of Mathematics. Since I have started my teaching duties at the University of Leeds, I have always scored more than **4.3/5**.

- Sept 2016 – present: **module leader of Mathematical Methods and Advanced Mathematical Methods**. For this module I have prepared lecture notes (170 latex-pages) and exercises. The former module is taken by Level 3 students, whereas the latter is taken by Level 5, Master students and PhD students. The modules are taken by some 85 students.
- Sept 2016 – present: **module leader of MATH3001 Project in Mathematics**. This is a year-long module for a group of Level 3 students, in which they learn stochastic processes from scratch.
- Sept 2016 – present: **module leader of Introduction to Applied Mathematics 2**. This is a foundation year module, taken by some 80 students.
- **Example classes** (since 2012) for Calculus and Mathematical Analysis, Vector Calculus, Non-linear Differential Equations, Mathematics I and II.

- Sept 2012 – May 2015: **module leader of Special Relativity**. Preparation of lecture notes and exercises.
- 14/09/2006 – 30/11/2006: **fixed-term Lecturer** of the course of Physics applied to Ecosystems and Introduction to Complex Networks, University of Udine.
- 19/04/2006 – 23/06/2006: **fixed-term Lecturer** of the course of Environmental Physics and Introduction to Complex Networks, University of Udine (Italy).
- 18/04/2005 – 24/06/2005: **Teaching Assistant** (demonstrator) of the course of Environmental Physics and Introduction to Complex Networks, University of Udine (Italy).
- 28/01/2004 – 19/03/2004: **Teaching Assistant** (demonstrator) of Classical Physics Lab, University of Udine (Italy).
- **5 Internal PhD students**: Leonardo Miele (2017), Ekemini Akpan (2017), Giacomo Baldo (2016), Fabio Peruzzo (2015), Joana Melo (2015).
- **2 External PhD students**: Charlotte James (2014), Anna Tovo (2014).
- **External PhD examiner**: Daniele Busiello (PhD candidate in Physics, University of Padova)
- **3 MSc students**: Diepreye Ayabina (2013), Jade Ludjet (internship, 2015), Jiayi Fang (2017), Ding Xu (2017) (the last two in Financial Mathematics).

Leadership, Memberships and Grants

- 2018: Invited **Lead Guest Editor** for a Special Issue in *Complexity*. Title “Scales and complexity in ecological communities: models, methods and predictions”.
- 2017-2019: **Newton Mobility Award** (China-UK) funded by The Royal Society (£10,000). This is a grant for a collaboration with the China University of Mining and Technology (School of Science) in Jiangsu (Shanghai), linked to Fudan University. The project involves months of work both in China and the UK.
- **Organization of the satellite conferences** “Robustness, Adaptability and Critical Transition in Living Systems” for the “European Conference on Complex Systems” (ECCS14), Lucca (Italy), Sept. 22-26, 2014 and CCS16, Amsterdam (The Netherlands), Sept. 19-22, 2016.
- **Organization of the seminar series** “Mathematical Biology and Medicine” (15/01/2014 – 30/06/2014 and 15/09/2016 – 15/12/2016) of the School of Mathematics (University of Leeds);
- 2016: Member of the **London Mathematical Society**.
- 2015: **collaboration with Thomson Ecology**. This involves consulting work with an industry.

Recent Invited Seminars

- September 2018: 5-day workshop on “Advanced asymptotics in PDEs, probabilistic methods in statistical physics for extreme statistics and rare events”, *Centro di Ricerca Matematica (CRM) Ennio De Giorgi*, Pisa, (Italy).
- January 2018: Lecture series for PhD students in Physics, *University of Padova* (Italy).
- 2017: Lecture series on stochastic gene expression, *University of Padova* (Italy).
- 2017: School of Mathematics, *Open University*, (UK).
- 2016: *Isaac Newton Institute for Mathematical Sciences*, Cambridge (UK).
- 2016: Department of Computing, *University of Verona*, Verona (Italy).
- 2016: School of Physics, *University of Edinburgh* (UK).
- 2015: School of Mathematics, *Imperial College London* (UK).
- 2015: “*Abdus Salam*” *International Centre for Theoretical Physics*, Trieste (Italy).
- 2015: *Living systems, from interaction patterns to critical behaviour*, Venice (Italy).
- 2015: *European Ecological Conference*, Rome (Italy).
- 2015: School of Mathematics, *University of Glasgow* (UK).
- 2014: School of Mathematics, *University of Oxford* (UK).
- 2014: *European Conference on Complex Systems 2014*, Lucca (Italy).
- 2014: School of Geography, *University of Leeds* (UK).
- 2014: Department of Mathematical Engineering, *University of Bristol* (UK).
- 2012: School of Mathematics, *University of Leeds*, (UK).
- 2012: *SCALES Annual Meeting*, Nicosia (Cyprus).

Selected Publications

- F. Peruzzo & **S. Azaele**, “A Phenomenological Spatial Model for Macro-Ecological Patterns in Species-Rich Ecosystems” in *Stochastic Processes, Multiscale Modeling, and Numerical Methods for Computational Cellular Biology*, Springer (2017).
- A. Tovo, S. Suweis, M. Formentin, M. Favretti, I. Volkov, J. R. Banavar, **S. Azaele** & A. Maritan; Upscaling species richness and abundances in tropical forests; *Science Advances* **3**: e1701438 (2017).
- S. Azaele**, S. Suweis, J. Grilli, I. Volkov, J. R. Banavar & A. Maritan; Statistical mechanics of ecological systems: neutral theory & beyond; *Reviews of Modern Physics*, **88**(3), 035003 (2016).
- S. Azaele**, A. Maritan, S. J. Cornell, S. Suweis, J. R. Banavar, D. Gabriel & W. E. Kunin; Towards a unified descriptive theory for spatial ecology: predicting biodiversity patterns across spatial scales, *Methods in Ecology and Evolution*, **6**, 324–332 (2015).
- L. J. Barwell, **S. Azaele**, W. E. Kunin & N. J. B. Isaac; Can coarse-grain patterns in insect atlas data predict local occupancy? *Diversity and Distributions*, **20**, 895–907 (2014).
- S. Azaele**, S. J. Cornell & W. E. Kunin; Downscaling species occupancy from coarse spatial scales, *Ecological Applications*, **22**, 1004–1014 (2012).
- C. Borile, M. Muñoz, **S. Azaele**, J. R. Banavar & A. Maritan; Spontaneously broken neutral symmetry in an ecological system; *Physics Review Letters*, **109**, 038102 (2012).
- F. Di Patti, **S. Azaele**, J. R. Banavar & A. Maritan; System size expansion for systems with an absorbing state; *Physics Review E*, **83**, 010102(R) (2011).
- S. Azaele**, R. Muneeppeerakul, A. Rinaldo & I. Rodriguez-Iturbe; Inferring plant ecosystem organization from species occurrences; *Journal of Theoretical Biology*, **262**, 323-329 (2010).
- S. Azaele**, R. Muneeppeerakul, A. Maritan, A. Rinaldo & I. Rodriguez-Iturbe; Predicting Spatial Similarity of Freshwater Fish Biodiversity; *Proc. Natl. Acad. Sci. USA*, **106**, 7058-7062 (2009).
- S. Azaele**, S. Pigolotti, J. R. Banavar & A. Maritan; Dynamical Evolution of Ecosystems; *Nature*, **444**, 926-928 (2006).

Data

27/12/2017

Luogo

Leeds, United Kingdom