

# Curriculum Vitae

## Personal information

First name(s) / Surname(s) **de Franciscis, Sebastiano**  
Address(es)  
Telephone(s)  
E-mail  
Nationality Italian  
Date of birth 26/06/80  
Gender Male

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## Latest work experience

Dates	From January 2017
Position held	<b><u>Postdoc position</u> in the Stellar Variability Group</b>
Name and address of the employer	Andalusian Institute of Astrophysics (IAA), Glorieta de la Astronomía s/n, 18008, Granada, Spain <a href="http://www.iaa.es">www.iaa.es</a>
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Dates	February 2015 to August 2016
Position held	<b><u>Contracted researcher</u> in the Project “High resolution study in the impact of climate change in Duero water basin”</b>
Name and address of the employer	Applied Physics Department, University of Granada, Avenida Fuentenueva s/n, 18071, Granada, Spain

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Dates	November 2011 to November 2013
Position held	<b><i>Postdoc position in the IEO Institute of European Oncology project in the System Biomedicine Group</i></b>
Name and address of the employer	IEO European Institute of Oncology, IFOM-IEO campus, Via Adamello, 16, 20139 Milan, Italy

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Dates	January 2007 to October 2011
Position held	<b><i>PhD student in the project "Study, modelling and analysis of emergent properties for bioinspired neural nets"</i></b>
Name and address of the employer	Electromagnetism and Physics of Matter Department, University of Granada, Avenida Fuentenueva s/n, 18071, Granada, Spain

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## **Main Education and Training**

**Accreditation from the ANECA (Spanish National Agency of Quality Evaluation) in order to practice as lecturer in Spanish public universities. 12 de September 2012.**

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Dates	From January 2009 to October 2011
Title of qualification awarded	<b>PhD in Physics</b>
Name and type of organization providing training	Department of Statistical Physics, UGR, Granada University, Granada, Spain
Level in national or international classification	<b>Doctor of Philosophy (PhD).</b> Phd Thesis defense on 3rd October 2011. Final rank: Sobresaliente cum Laude (summa cum laude) <b><i>PhD thesis entitled "Study of long-range correlations and criticality in neural media and other biological systems"</i></b>

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Dates	From September 1998 to December 2003
Title of qualification awarded	<b>Physics degree syllabus (Italian Laurea)</b> , obtained on December 17, 2003, final mark 110/110 e lode (summa cum laude)
Name and type of organization providing education and training	University of Naples "Federico II", Italy
Level in national classification	<b>Laurea Magistrae</b>

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## **Scientific Publications**

1. "Fractal analysis applied to light curves of  $\delta$ .Scuti stars", S. de Franciscis, J Pascual-Granado, J C Suárez, A GarcíaHernández, R Garrido, *Monthly Notices of the Royal Astronomical Society*, Volume 481, Issue 4, 21 December 2018, Pages 4637–4649.
2. "Bounded noise induced first-order phase transitions in a baseline non-spatial model of gene transcription", d'Onofrio, A., Caravagna, G., & de Franciscis, S. (2018). *Physica A: Statistical Mechanics and its Applications*, 492, 2056-2068.
3. "Trends in soil moisture and real evapotranspiration in Douro River for the period 1980-2010" , García-Valdecasas-Ojeda, M., de Franciscis, S., Raquel Gámiz-Fortis, S., Castro-Díez, Y., & Jesús Esteban-Parra, M. (2017, April). In *EGU General Assembly Conference Abstracts* (Vol. 19, p. 17873).
4. "Hydrological characterization of Guadalquivir River Basin for the period 1980-2010 using VIC model", García-Valdecasas-Ojeda, M., de Franciscis, S., Raquel Gámiz-Fortis, S., Castro-Díez, Y., & Jesús Esteban-Parra, M. (2017, April)In *EGU General Assembly Conference Abstracts* (Vol. 19, p. 17838).
5. "Evaluation of high-resolution WRF climate simulations for hydrological variables over Iberian Peninsula", M. García-Valdecasas Ojeda, S. de Franciscis, S. R. Gámiz-Fortis, Y. Castro-Díez, M. J. Esteban-Parra. *EGU General Assembly Conference Abstracts*, 2018, 14153.
6. "Coupling study of the Variable Infiltration Capacity (VIC) model with WRF model to simulate the streamflow in the Guadalquivir Basin", M. García-Valdecasas Ojeda, S. de Franciscis, S. R. Gámiz-Fortis, Y. Castro-Díez, M. J. Esteban-Parra. *EGU General Assembly Conference Abstracts*, 2018, 14559.
7. "Gene switching rate determines response to extrinsic perturbations in a transcriptional network motif", S. de Franciscis, G Caravagna, A d'Onofrio, *Scientific reports*, 6, 26980.
8. "Evaluación de simulaciones de la precipitación en clima presente usando el modelo WRF en la Península Ibérica", MGV Ojeda, S de Franciscis, SRG Fortis, AYC Díez, MJ Esteban Parra - Clima, sociedad, riesgos y ordenación del territorio, 2015, ISBN 978-84-16724-19-2, 449-460.
9. "Regional drought variability assessment over Spain using WRF model", MGV Ojeda, S de Franciscis, SRG Fortis, AYC Díez, MJ Esteban Parra - Clima, sociedad, riesgos y ordenación del territorio, 2015, ISBN 978-84-16724-19-2, 461-470.
10. "Coupling study of the Variable Infiltration Capacity (VIC) model with Weather Research and Forecasting (WRF) model to simulate the streamflow in the Guadalquivir Basin", MGV Ojeda, S de Franciscis, SRG Fortis, AYC

Díez, MJ Esteban Parra - Clima, sociedad, riesgos y ordenación del territorio, 2015, ISBN 978-84-16724-19-2, 109-120

11. "Bounded noises as a natural tool to model extrinsic fluctuations in biomolecular networks", S. de Franciscis, G. Caravagna, A. d'Onofrio, *Natural Computing*, 1-11, May 2014.
12. "Cellular polarization: interaction between extrinsic bounded noises and wave-pinning mechanism", S. de Franciscis and A. d'Onofrio, *Physical Review E*, 88, 032709, 2013.
13. "Spatiotemporal sine-Wiener Bounded Noise and its effect on Ginzburg-Landau model"  
S. de Franciscis and A. d'Onofrio, *Nonlinear Dynamics*, 74 (3), 607-613, 2013.
14. "Spatiotemporal Bounded Noises and Their Application to the Ginzburg–Landau Equation", S. de Franciscis and A. d'Onofrio, *Bounded Noises in Physics, Biology, and Engineering. Series: Modeling and Simulation in Science, Engineering and Technology*, 117-129, Springer, New York, 2013.
15. "Spatiotemporal Bounded Noises, and transitions induced by them in solutions of the real Ginzburg-Landau model", S. de Franciscis and A. d'Onofrio, *Physical Review E*, 86, 021118, 2012
16. "Synchronization phenomena in networks of spiking neurons with a correlated scale-free topology"  
S. de Franciscis, J. Mejías, S. Johnson and J.J. Torres, (Preprint, 2013)
17. "Enhancing neural-network performance via assortativity"  
S. de Franciscis, S. Johnson and J.J. Torres, *Physical Review E*, 83 (3), 036114, 2011
18. "Analysis of Lattice Gas Models of Tumor Growth by Means of Fractal Scaling "  
S. de Franciscis, H. Hatzikirou and A. Deutsch, *Acta Physica Polonica B Proceedings Supplement*, 4 (2), 167-182, 2011
19. "Unstable Dynamics, Nonequilibrium Phases and Criticality in Networked Excitable Media"  
S. de Franciscis, J. J. Torres and J. Marro, *Physical Review E*, 82 (4), 041105, 2010
20. "Excitable Networks: Non-Equilibrium Criticality and Optimum Topology"  
J.J. Torres, S. de Franciscis, S. Johnson and J. Marro, *International Journal of Bifurcation and Chaos*, 20 (3), 1-7, 2010
21. "Self-organization without Conservation: are Cortical Networks Critical?"  
J.A. Bonachela, S. de Franciscis, J.J. Torres and M.A. Muñoz, *Journal of Statistical Mechanics (2010) P02015*
22. "Nonequilibrium behavior in neural networks: criticality and optimal performance"  
J.J. Torres, S. Johnson, J.J. Mejías, S. de Franciscis and J. Marro,  
"Advances in Cognitive Neurodynamics (II)" Wang, Rubin; Gu, Fanji (Eds.), Springer, 2010, ISBN: 978-90-481-9694-4
23. "Chaos in Heterogeneous Networks with Temporally Inert Nodes"  
J. J. Torres, J. Marro and S. de Franciscis, *International Journal of Bifurcation and Chaos*, 19 (2), 677-686, 2009
24. "Excitable Networks: Non-Equilibrium Criticality and Optimum Topology"

J.J. Torres, S. de Franciscis, S. Johnson and J. Marro, *Modelling and Computation on Complex Networks and Related Topics. Criado, Gonzalez-Viñas, Mancini and Romance Edts. Proceedings of the conference "Net-Works 2008"*

25. "Complex networks with time-dependent connections and silent nodes"  
J. Marro, J.J. Torres, J.M. Cortes and S. de Franciscis, *New Trends and Tools in Complex Networks. Criado, Pello and Romance Edts, Proceedings of the conference "Net-Works 2007"*
  26. "Fractal analysis and tumor growth"  
A.Bru', D. Casero, S. de Franciscis, M.A. Herrero, *Mathematical and Computer Modelling*, 47 (5-6) (2008)
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## **International seminars and workshops**

- "TESSting stellar astrophysics, TASC3 KASC10 Workshop", University of Birmingham, 16-21 July 2017, **Poster Presentation**
- "TIME & MEASUREMENT WORKSHOP", Andalusian Institute of Astrophysics IAA, 6-8 June 2017, **Organization Staff and Talk Session: "Fractals, self-similarity on astro time series"**
- "Wivace 2013, Italian Workshop on Artificial Life and Evolutionary Computation" *BIMIB, Bionformatics Milano Bicocca*, 1-2/07/2013, Milan (Italy), **Talk Session: "Bounded noise-controlled evasion of tumors from immune system control"**
- "Mathways into Cancer II", *US Universidad de Sevilla*, 27-30/05/13, Carmona (Spain), **Talk Session: "Stem Cells: modeling from individuals to populations (passing through the data)"**
- "XVIII Congreso de Física Estadística", IFISC Institute for Cross-Disciplinary Physics and Complex Systems, and UIB Universidad de les Illes Balears, 18-20/10/12, Palma de Mallorca (Spain), **Poster Presentation**
- "12th Granada Seminar on Computational and Statistical Physics", Institute "Carlos I" for Theoretical and Computational Physics, University of Granada, La Herradura, Spain, 17-21/09/2012, **Poster Presentation**
- "Mathways into Cancer", *UCLM Universidad de Castilla La Mancha*, 4-6/06/12, Almagro (Spain), **Talk Session: "Bounded noise-controlled evasion of tumors from immune system control"**
- "Emergence and Design of Robustness" General Principles and Applications to Biological Social and Industrial Networks, IFISC, Palma de Mallorca, Spain, 21-25/09/2010, **Poster Presentation**
- "11th Granada Seminar on Computational and Statistical Physics", Institute "Carlos I" for Theoretical and Computational Physics, University of Granada, La Herradura, Spain, 13-17/09/2010, **Poster Presentation and Organization Staff**
- "SOLSTICE 2010, 2nd summer solstice international conference on discrete models of complex systems" LORIA laboratory, Nancy, France, 16-18/06/2010, **Written Contribution**
- "10th Granada Seminar on Computational and Statistical Physics: Modeling and Simulation of New Materials" Instituto "Carlos I" de Física Teórica y Computacional, Facultad de Ciencias, Universidad de Granada, 15-19/09/08, **Organization Staff**
- "FISES '08, XV Congreso de Física Estadística", Facultad de Ciencias, Universidad de Salamanca, 27-29/03/08, **Poster Presentation**

- "II summer school and workshop in modeling mathematical methods and computer simulation of tumor growth and therapy", Marie Curie Research Training, On Mathematical Methods and Computer Simulation of Tumour Growth and Therapy, Crete, Greece, 15-19/07/06, **Talk Session**

- "Which mathematics for biology?", Crete, Greece, 9-15/07/06, **Poster Presentation**

- "I summer school and workshop in modelling mathematical methods and computer simulation of tumor growth and therapy" Marie Curie Research Training, On Mathematical Methods and Computer Simulation of Tumor Growth and Therapy, Tenerife, Spain, 5-10/09/05, **Talk Session**

## **Educational, Didactic and Science outreach activities**

Dates	29 Septiembre 2017
Occupation held	Talk on "The beat of the stars". The talk was included in the Granada European Researcher's Night: <a href="https://lanochedelosinvestigadores.fundaciondescubre.es/actividades/beat-las-estrellas-the-beat-of-the-stars/">https://lanochedelosinvestigadores.fundaciondescubre.es/actividades/beat-las-estrellas-the-beat-of-the-stars/</a>
Name and address of the employer	Outreach activity of the Andalusian Institute of Astrophysics (IAA)
Dates	24 May 2018
Occupation held	Talk on "Sonification, the symphony of stars". The talk was included in Lucas Lara didactic conference events: <a href="http://www.iaa.es/lucas_lara">http://www.iaa.es/lucas_lara</a>
Name and address of the employer	Andalusian Institute of Astrophysics (IAA), Glorieta de la Astronomía s/n, 18008, Granada, Spain <a href="http://www.iaa.es">www.iaa.es</a>
Dates	14 to 16 May 2018
Position held	Organization Staff of Pint of Science Festival 2018, Granada
Main activities and responsibilities	Logistic, coordinating
Name and address of the employer	<a href="https://pintofscience.es/events/granada">https://pintofscience.es/events/granada</a> <a href="https://pintofscience.es/equipo/Equipo%20Granada">https://pintofscience.es/equipo/Equipo%20Granada</a>
Dates	10 to 11 April 2018
Occupation held	Whorkshop on "Physics, sounds and music" directed to students in 1 <sup>st</sup> And 2 <sup>nd</sup> year of ESO (Educación Escolar Obligatoria) in public education system school

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Name and address of the employer	IES José Manuel Caballero Bonald. Calle Ntra. Sra. Del Traspaso, s/n, 11406 Jerez de la Frontera, Cádiz Outreach activity of the Andalusian Institute of Astrophysics (IAA)
Dates	1 December 2017 and 23 February 2018
Occupation held	1 <sup>st</sup> IAA Music and Science Festival, artistic supervisor and organization staff
Name and address of the employer	Outreach activity of the Andalusian Institute of Astrophysics (IAA)
Dates	29 Septiembre 2017
Occupation held	Talk on “Sonification, the music we can not see”. The talk was included in the Granada European Researcher’s Night: <a href="https://www.iaa.csic.es/noticias/noche-tods">https://www.iaa.csic.es/noticias/noche-tods</a>
Name and address of the employer	Outreach activity of the Andalusian Institute of Astrophysics (IAA)
Dates	From 2002 to 2004
Position held	Scholar groups guide in the Museum “City of Science” located in Naples, Italy
Name and address of the employer	Le Nuvole teatro stabile d'innovazione ragazzi, Via Coroglio 104, 80124, Naples, <a href="http://www.lenuvole.com/home">http://www.lenuvole.com/home</a>

## **Language skills**

<b>Italian</b>	Mother tongue	
<b>Spanish</b>	Proficient user, C2	
<b>English</b>	Proficient user, B2	<b>Ranking of 76/100 in the Cambridge FCE, obtained in 2014</b>
<b>German</b>	Basic user, A2	<b>Certificate from Goethe Institut, obtained in 2007</b>

## **Social skills**

- I worked in three different European countries, Italy, Spain and Germany, where I was dealing, both in my work teams and in the share flats where I lived, with several people from different countries and cultures. I have learned and appreciated different forms of work philosophy and planning, as well as life styles, integrat-

ing them in my cultural background, and contributing in these environments with my personal vision of life and work.

- Creativeness

### **Organizational skills**

- Ability to establish and maintain good working relations with people of different national and cultural backgrounds
- Able to cope with different situations, also under pressure and limited instruments

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### **Music activities and training**

I study and play guitar since 1990, I have an authentic interest in acoustic music, ranging from classical (due to my first early musical education) to folk music, jazz and flamenco.

I joined as guitarist in different groups: Italian folk music trio, jazz ensemble, jazz big bands. I like to play classic, jazz and folk themes. In the last years I'm approaching to alto saxophone and piano.

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### **Car Driving Licence, Category B**

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### **Computer skills**

- OS: Windows, Linux and Mac OS
- Program languages: C/C++, Linux-Bash, C-Shell, Matlab, Mathematica
- Maths editing softwares: Latex