

Emilio Franco (PhD)

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Qualifications

- 17/Sep/2012 **Ph. D. in Mathematics.**
Higgs bundles over elliptic curves.
Supervisor: Óscar García-Prada.
Institute of Mathematical Sciences (ICMAT), Madrid (Spain).
Autonomous University of Madrid (UAM), Madrid (Spain).
- Oct/2008 **M.Sci. in Mathematics and Applications.**
Autonomous University of Madrid (UAM), Madrid (Spain).
- Jun/2007 **B. Sci. in Mathematics.**
Autonomous University of Madrid (UAM), Madrid (Spain).
- Sep/2006 **B. Sci. in Physics.**
Autonomous University of Madrid (UAM), Madrid (Spain).
(One year at Catholic University of Louvain (Belgium) with Erasmus grant).

Employment

- 01/06/2019 – Present FCT Researcher
Centre for Mathematical Analysis, Geometry and Dynamical Systems (CAMGSD)
Instituto Superior Técnico, U. Lisboa (Portugal).
- 01/Feb/2018 – 21/02/2019 Dedicated to the care of my daughter.
- 01/Feb/2018 – 31/05/2019 Integrated member (mere association, not a professional relation)
Centre for Mathematics at the University of Porto (CMUP),
University of Porto, Porto (Portugal).
- 01/Feb/2017 – 31/Jan/2018 Research Associate.
Centre for Mathematics at the University of Porto (CMUP),
University of Porto, Porto (Portugal).
- 01/Mar/2013 – 31/Dic/2016 Research Associate.
Institute of Mathematics and Scientific Computation (IMECC),
Campinas State University (Unicamp), Campinas (Brazil).
- 08/Oct/2012 – 31/Dic/2012 Research Associate.
Department of Mathematics, Free University of Berlin, Berlin (Germany).
- 01/Jan/2008 – 17/Sep/2012 Predoctoral Fellow.
Institute of Mathematical Sciences (ICMAT), Madrid (Spain).

Research Visits

22/02/2019 – 31/05/2019	Institute of Mathematical Sciences (ICMAT), Madrid (Spain), 3 months.
20/Jul/2015 – 19/Jul/2016	Department of Mathematics, Imperial College London (UK), 1 year.
04/Apr/2011 – 01/Jul/2011	Isaac Newton Institute for Mathematical Sciences, Cambridge (UK), 3 months.
01/Mar/2010 – 28/May/2010	Department of Mathematics, University of Liverpool (UK), 3 months.
02/Mar/2009 – 29/May/2009	Department of Mathematics, University of Liverpool (UK), 3 months.

Grants and Awards

Sep/2018	FCT Post-Doctoral Fellowship (Assistant Researcher) 6 years of post-doctoral position at IST Lisboa (Portugal).
Apr/2017	Seal of Excellence - Marie Skłodowska Curie action Call H2020-MSCA-IF-2016 Awarded by the European Commission.
20/Jul/2015 – 19/Jul/2016	BEPE Fellowship for Abroad Research Stages: £31,440.00 Awarded by the São Paulo Foundation for Research Support (FAPESP).
01/Mar/2013 – 31/Dic/2016	FAPESP Postdoctoral Fellowship: R\$ 193.987,76 (Brazilian Reals) Awarded by the São Paulo Foundation for Research Support (FAPESP).
01/Jan/2008 – 31/Jan/2011	IAE Predoctoral Fellowship: €67,200 Awarded by the Spanish High Scientific Research Council (CSIC, Spain).
04/Apr/2011 – 01/Jul/2011	Visiting Student Scholarship: €4,500.00 Funds for a 3 months visit at the Isaac Newton Institute for Mathematical Sciences, Cambridge (UK). Awarded by the Spanish High Scientific Research Council (CSIC, Spain).
01/Mar/2010 – 28/May/2010	Visiting Student Scholarship: €4,500.00 Funds for a 3 months visit at the University of Liverpool (UK). Awarded by the Spanish High Scientific Research Council (CSIC, Spain).
02/Mar/2009 – 29/May/2009	Visiting Student Scholarship: €4,500.00 Funds for a 3 months visit at the University of Liverpool (UK). Awarded by the Spanish High Scientific Research Council (CSIC, Spain).
15/Sep/2006 – 15/Jun/2007	Undergraduate Research Project Opportunity: €2,500.00 Undergraduate scholarship for a research project. Awarded by the Spanish Ministry of Science and Education.

Publication record

1. E. Franco, O. García-Prada and P. E. Newstead, *Higgs bundles over elliptic curves*, **Illinois J. Math.** 58 (1) (2014), 43–96.
2. E. Franco, M. Jardim and S. Marchesi, *Branes in the moduli space of framed instantons*, **Bull. Sci. Math.** 141 (4) (2017), 353–383.
3. E. Franco and P. Tortella, *Moduli spaces of Λ -modules on abelian varieties*, **Adv. Math.** 318 (2017), 459–496.
4. E. Franco, M. Jardim and G. Menet, *Brane involutions on irreducible symplectic manifolds*, accepted for publication in **Kyoto J. Math.** 59 (1) (2019), 195–235.
5. E. Franco, O. García-Prada and P. E. Newstead, *Higgs bundles over elliptic curves for complex reductive Lie groups*, published online in **Glasgow Math. J.** 61 (2) (2019), 297–320.
6. E. Franco, O. García-Prada and P. E. Newstead, *Higgs bundles over elliptic curves for real groups*, published online in **Quarterly J. Math.** 70 (1) (2019), 105–146.
7. I. Biswas, L.A. Calvo, E. Franco and O. García-Prada, *Involutions of the moduli spaces of G -Higgs bundles over elliptic curves*, **J. Geom. Phys.**, 142 (2019), 47–65.

Submitted preprints

1. Emilio Franco, Peter Gothen, André Oliveira, Ana Peón-Nieto, *Unramified covers and branes on the Hitchin system*, arXiv: 1802.05237.
2. E. Franco and A. Peón-Nieto, *The Borel subgroup and branes on the Higgs moduli space*, arXiv:1709.03549.
3. E. Franco and M. Jardim, *Mirror symmetry for Nahm branes*, arXiv:1709.01314.

Invited talks in conferences and workshops

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| 29/Jul/2019 – 02/Ago/2019 | <i>ISSAC 2019 - Special Session on Complex Geometry</i> , Aveiro, Portugal.
https://sites.google.com/view/isaac2019-complex-geometry/home |
| 03/June/2019 – 07/June/2019 | <i>Algebraic Analysis and Geometry with a view on Higgs bundles and D-modules</i> , Porto, Portugal.
https://sites.google.com/view/aga-porto-2019/home |

12/Nov/2018 – 16/Nov/2018	<i>New Trends in Higgs Bundle Theory</i> , ICMAT Madrid, Spain. https://www.icmat.es/RT/2018/RPMS/hbt.php
22/Sep/2016 – 23/Sep/2016	<i>Workshop Indo-European project MODULI</i> , Madrid (Spain). https://www.icmat.es/projects/irsesmoduli/booklet_indo-european.pdf
29/Ago/2016 – 02/Sep/2016	<i>First joint meeting Brazil-Italy in mathematics</i> , Rio de Janeiro (Brazil). https://www.sbm.org.br/jointmeeting-italy/special-sessions/
31/Jul/2016 – 5/Ago/2016	<i>24th Brazilian Algebra Meeting</i> , Diamantina (Brazil). Annual encounter of Brazilian and south American algebrists. More than 200 participants, organized in 7 special sessions.
05/Oct/2015 – 16/Oct/2015	<i>Conference for the 50 years of the Narasimhan–Seshadri Theorem</i> , Chennai (India). https://www.cmi.ac.in/ramadas/NS@50/
22/Jun/2015 – 24/Jun/2015	<i>III Workshop on Poisson Geometry and related topics</i> , Campinas (Brazil). https://www2.ime.unicamp.br/intranet/iii-workshop-poisson-geometry-and-related-topics
17/Feb/2014 – 22/Feb/2014	<i>LEGAL 2014 (Liberdade Em Geometria Algébrica)</i> , Teresópolis (Brazil). Bi-annual encounter of young Brazilian algebraic geometers, in the spirit of GAEL. More than 50 participants.
06/Dic/2012 – 07/Dic/2012	<i>NoGAGS 2012 (Northern Germany Algebraic Geometry Seminar)</i> , Berlin (Germany). https://meta.wikimedia.org/wiki/NoGAGS_Berlin_2012

Invited seminars

28/03/2019	ICMAT, Madrid (Spain).
27/Sep/2018	IST Austria, Vienna (Austria).
19/Sep/2018	Dept. Mathematics, University of Plymouth (UK).
16/Mar/2018	CMUP, University of Porto (Portugal).
29/Sep/2017	Dept. of Mathematics, University of Lisbon (Portugal).
13/Sep/2017	CMUP, University of Porto (Portugal).
06/Apr/2017	Edinburgh Hodge Institute, Edinburgh (UK).
10/Feb/2017	CMUP, University of Porto (Portugal).
01/Nov/2016	IMPA, Rio de Janeiro (Brazil).
29/Sep/2016	School of Mathematics, Trinity College Dublin (Ireland).
28/Jan/2016	Mathematics Center, Heidelberg University (Germany).
11/Mar/2015	ICMAT, Madrid (Spain).
01/Oct/2015	School of Mathematics, Tata Institute of Fundamental Research, Mumbai (India).

19/Nov/2014	Inst. of Math. and Stat., Federal Fluminense University, Rio de Janeiro (Brazil).
09/Jul/2014	Dept. of Mathematics, Université de Pau et des Pays de l'Adour, Pau (France).
01/Jul/2014	Dept. of Mathematics, Instituto Superior Técnico, Lisbon (Portugal).
03/Jul/2013	Dept. of Mathematics, Free University of Berlin (Germany).
23/Nov/2012	Dept. of Mathematics, Friedrich-Alexander University at Erlangen (Germany).

Other conference contributions

11/Jan/2016 – 15/Jan/2016	<i>VBAC 2016 (Vector Bundles over Algebraic Curves)</i> , Lausanne (Switzerland).
16/Jun/2014 – 20/Jun/2014	<i>Workshop on the Geometry and Physics of Moduli Spaces</i> , Miraflores de la Sierra (Spain).
17/Jun/2013 – 21/Jun/2013	<i>VBAC 2013 (Vector Bundles over Algebraic Curves)</i> , Trieste (Italia).
23/Jul/2012 – 03/Ago/2012	<i>GEAR Junior Retreat</i> , Urbana-Champaign, (Illinois, US).

Teaching

As a lecturer:

2015	"Analytic Geometry" MA 141, undergraduate course, 1st year of Engineering on Chemistry, Campinas State University.
2014	"Linear Algebra" MM 719, Summer course, introductory to M. Phil in Mathematics, postgraduate course, Campinas State University.

As a tutor assistant:

2012	"Mathematics", undergraduate course, 1st year of Engineering on Environmental Sciences, Autonomous University of Madrid.
2011	"Mathematics", undergraduate course, 1st year of Engineering on Environmental Sciences, Autonomous University of Madrid.

Other

- Referee for *Advances in Mathematics*.

- Referee for *Int. J. of Geometric Methods in Modern Physics*.
- Reviewer for *Mathematical Reviews/MathSciNet*.
- Co-organizer of "Working seminar on algebraic stacks and the Geometric Langlands Correspondence", Porto (Portugal) 03.2017-06.2017, (<https://stacksatporto.wordpress.com/>).
- Co-organizer of thematic session at *II Congresso Brasileiro de Jovens Pesquisadores em Matemática Pura e Aplicada*, Campinas (Brazil) 12.2016.
- Co-organizer of outreach activity *Graffiti y Mates* years 2010 and 2011, within the Mathematical Culture Unit of ICMAT Madrid (<https://www.youtube.com/watch?v=jb641EP27eM>).
- Mentor of undergraduate students within the *International Mentor Program* of IMFAHE (<https://imfahe.org>).

Language skills

Spanish (native), English (fluent), Portuguese (fluent), French (fluent) and Italian (intermediate).