

CURRICULUM VITAE

PERSONAL DATA



Francesco Stellato
Napoli (Italy), 17th November 1981
📍 University of Rome Tor Vergata & INFN
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CURRENT POSITION

Researcher (RTD-B) – Physics Department - University of Rome Tor Vergata

RESEARCH POSITIONS

Habilitation as Assistant Professor in Applied Physics (FIS 02/D1)
Valid until 5/12/2023

Habilitation as Assistant Professor in Experimental Matter Physics (FIS 02/B1) – until 12/04/2023

Post-Doctoral research fellow (since October 2013)

I.N.F.N. (National Institute for Nuclear Physics) – Italy

Post-Doc researcher (March 2010 – October 2013)

Center for Free Electron Laser science (CFEL) – DESY Hamburg
Coherent Imaging Division - Prof. Henry Chapman's group.

EDUCATION

University of Rome “Tor Vergata”

PhD in Physics with ‘European Doctorate Label’, March 2010

Thesis Title: “X-ray Absorption Spectroscopy: a powerful tool for structural studies of molecules involved in the pathogenesis of neurodegenerative diseases”

Thesis supervisor: Prof. Silvia Morante, University of Rome “Tor Vergata”

University of Rome “Tor Vergata”

MSc in Physics, June 2006 - 110/110 magna cum laude

Dissertation Title: "The role of metals in aggregation processes: a study with X-ray Absorption Spectroscopy".

Advisor: Prof. Silvia Morante, University of Rome “Tor Vergata”

University of Rome “Tor Vergata”

BSc in Physics, May 2004 - 110/110 magna cum laude

Dissertation Title: “NMR of Proteins: Determination of Protein G 3D Structure using only Residual Dipolar Coupling”

Advisors: Prof. Silvia Morante, University of Rome “Tor Vergata”

Dr. Martin Blackledge, Institut de Biologie Structurale J.P.Ebel, Grenoble

**PUBLICATIONS ON
JOURNALS WITH
PEER REVIEW**

1. F. Stellato *et al.* (2019) *Dealing with Cu reduction in X-ray Absorption Spectroscopy experiments*. *Metallomics* (in press)
2. E. De Santis *et al.* (2019) *X-ray Absorption Spectroscopy Measurements of Cu-ProIAPP Complexes at Physiological Concentrations*. *Condens. Matter* 4(1), 13.
3. A. Balerna *et al.* (2019) *The Potential of EuPRAXIA@ SPARC_LAB for Radiation Based Techniques* *Condens. Matter* 4(1), 30.
4. F. Villa *et al.* (2018) *Design study of a photon beamline for a soft X-ray FEL driven by high gradient acceleration at EuPRAXIA@ SPARC_LAB*. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*.
5. M. Ferrario *et al.* (2018) *EuPRAXIA@ SPARC_LAB Design study towards a compact FEL facility at LNF*. *Nuclear Instruments and Methods in Physics Research Section A*
6. E. Capozzi *et al.* (2018) *Designing effective anticancer-radiopeptides. A Molecular Dynamics study of their interaction with model tumor and healthy cell membranes*. *Biochimica et Biophysica Acta (BBA)-Biomembranes*.
7. M. Carbonaro *et al.* (2018) *Human insulin fibrillogenesis in the presence of epigallocatechin gallate and melatonin: Structural insights from a biophysical approach*. *International journal of biological macromolecules*, 115, 1157-1164.
8. F. Stellato *et al.* (2017) *The effect of β -sheet breaker peptides on metal associated Amyloid- β peptide aggregation process* *Biophysical Chemistry* 229, 110-114.
9. D. Popp *et al.* (2017) *Flow-aligned, single-shot fiber diffraction using a femtosecond X-ray free-electron laser* *Cytoskeleton* 74, 472-481.
10. C. Gati *et al.* (2017) *Atomic structure of granulins determined from native nanocrystalline granulovirus using an X-ray free-electron laser*. *PNAS* 114(9), 2247-2252.
11. M. Carbonaro, A. Di Venere, A. Filabozzi, P. Maselli, V. Minicozzi, S. Morante, E. Nicolai, A. Nucara, E. Placidi, F. Stellato (2016) *Role of dietary antioxidant (-)-epicatechin in the development of β -lactoglobulin fibrils* *BBA-Proteins and Proteomics*, 1864(7), 766-772.
12. A. Jakobi, D. Passon, K. Knoops, F. Stellato, M., Liang, T.A. White, H.N. Chapman, M. Wilmanns, (2016). *In cellulo serial crystallography of alcohol oxidase crystals inside yeast cells*. *IUCrJ*, 3(2).
13. E. de Santis, V. Minicozzi, O. Proux, G.C. Rossi, K.I. Silva, M.J. Lawless, F. Stellato, S. Saxena, S. Morante (2015) *Cu (II)-Zn (II) Cross-Modulation in Amyloid-Beta Peptide Binding: An X-ray Absorption Spectroscopy Study*. *Journal of Physical Chemistry B* 119.52: 15813-15820.
14. G. La Penna, V. Minicozzi, S. Morante, G.C. Rossi, F. Stellato (2015) *A first-principle calculation of the XANES spectrum of Cu^{2+} in water* *Journal of Chemical Physics* 143, 124508.

15. L.Galli et al. (2015) *Electronic damage in S atoms in a native protein crystal induced by an intense X-ray free electron laser pulse* Structural dynamics 2: 041703.*
16. G. van der Schot et al. (2015) *Imaging single cells in a beam of live cyanobacteria with an X-ray laser* Nature communications 6: 5704.
17. F. Stellato, V. Minicozzi, G.L. Millhauser, M. Pascucci, O. Proux, G.C. Rossi, A. Spevacek, S. Morante (2014) *Copper-Zinc cross-modulation in prion protein binding* European Biophysical Journal, 14: 631-642.
18. M.Hantke et al. (2014) *High-throughput imaging of heterogeneous cell organelles with an X-ray laser* Nature photonics 8, 943-949.
19. A.D.Rath et al. (2014) *Explosion dynamics of sucrose nanospheres monitored by time of flight spectrometry and coherent diffractive imaging at the split-and-delay beam line of the FLASH soft X-ray laser* Optics express 22, 28914-28925.
20. D. Arnlund et al. (2014) *Visualizing a protein quake with time-resolved X-ray scattering at a free-electron laser.* Nature methods 11: 923-926.
21. H.H. Lee et al. (2014) *Expression, purification and crystallization of CTB-MPR, a candidate mucosal vaccine component against HIV-1.* IUCrJ 1: 305-317
22. C. Kupitz et al. (2014) *Serial time-resolved crystallography of photosystem II using a femtosecond X-ray laser.* Nature 513: 261-265
23. F. Stellato et al. (2014) *Room-temperature macromolecular serial crystallography using synchrotron radiation.* IUCrJ 1(4): 204-212.
24. A.V. Martin et al. *X-ray holography with a customizable reference.* (2014) Nature communications 5: 4661
25. C.H. Yoon et al. (2014) *Conformation sequence recovery of a non-periodic object from a diffraction-before-destruction experiment.* Optics express 22.7: 8085-8093.
26. C. Gati et al. (2014) *Serial crystallography on in vivo grown microcrystals using synchrotron radiation.* IUCrJ 1: 87-94.***
27. M. Ferrario et al. (2014) *IRIDE: Interdisciplinary research infrastructure based on dual electron linacs and lasers.* Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 740: 138-146.
28. L.C. Johansson et al. (2013) *Structure of a photosynthetic reaction centre determined by serial femtosecond crystallography.* Nature communications 4.
29. T.A. White, A. Barty, F. Stellato, J.M. Holton, R.A. Kirian, N.A. Zatsepin, H.N. Chapman (2013) *Crystallographic data processing for free-electron laser sources.* Acta Cryst. D 69(7): 1231-1240.
30. L. Redecke et al. (2013) *Natively Inhibited Trypanosoma brucei Cathepsin B Structure Determined by Using an X-ray Laser.* Science 339: 227-230
31. D. Starodub et al. (2012) *Single-particle structure determination by correlations of snapshot X-ray diffraction patterns* Nature communications 3, 1276

32. A. Martin et al. (2012) *Noise-robust coherent diffractive imaging with a single diffraction pattern*. Optics Express 16650-16661
33. A. Martin et al. (2012) *Femtosecond dark-field imaging with an X-ray free electron laser*. Optics Express 13501-13512
34. S. Boutet et al. (2012) *High-Resolution Protein Structure determination by Serial Femtosecond Crystallography*. Science 337: 362-364
35. S. Kassemeyer et al. (2012) *Femtosecond Free-electron Laser X-ray Diffraction Data Sets for Algorithm Development* Optics Express, 20 (9): 4149-4158
36. L.C.Johansson et al. (2012) *Lipidic phase membrane protein serial femtosecond crystallography* Nature Methods, 9: 263-265
37. R. Koopmann et al. (2012) *In vivo crystallization and serial femtosecond crystallography of cathepsin B from the protozoan parasite Trypanosoma brucei* Nature Methods, 9: 259-262
38. A. Aquila et al. (2012) *Time-resolved protein nanocrystallography using an X-ray free-electron laser* Optics Express 20 (3) 2706-2716
39. A. Barty et al. (2012) *Self-terminating diffraction gates femtosecond X-ray nanocrystallography measurements* Nature photonics 6, 35-40
40. P. Giannozzi, K. Jansen, G. La Penna, V Minicozzi, S. Morante, G.C. Rossi, F. Stellato (2011) *Zn induced structural aggregation patterns of β -amyloid peptides by first-principle simulations and XAS measurements* Metallomics, 4: 156-165
41. L.Lomb et al. (2011) *Radiation damage in protein serial femtosecond crystallography using an X-ray free-electron laser* Phys Rev B, 84: 214111
42. F. Stellato, A. Spevacek, V. Minicozzi, O. Proux, S. Morante (2011) *Zinc modulates copper coordination mode in prion protein octa-repeat subdomains* European Biophysical Journal 40: 1259-1270
43. M. Salomone-Stagni, F. Stellato, C.M. Whaley, S. Vogt, S. Morante, S. Shima, T.B. Rauchfuss, W. Meyer-Klaucke (2010) *The iron-site structure of [Fe]-hydrogenase and model systems: an X-ray Absorption Near Edge Spectroscopy study*. Dalton Transaction 39, 3057-3064.
44. P.R. Crippa, M. Eisner, S. Morante, F. Stellato, F.C. Vicentin, L. Zecca (2010) *A XAS Study of the Sulphur Environment in Human Neuromelanin and its Synthetic Analogues*. European Biophysical Journal 39: 959-970
45. R. Besio, S. Alleva, A. Forlino, A. Lupi, C. Meneghini, V. Minicozzi, A. Profumo, F. Stellato, R. Tenni, S. Morante (2010) *Identifying the structure of the active sites of human recombinant prolidase*. European Biophysical Journal, 39: 935-945.
F.S. performed the experiment and analyzed the data
46. V. Minicozzi, F. Stellato, M. Comai, M. Dalla Serra, C.Potrich, W. Meyer-Klaucke, S. Morante (2008) *Identifying the Minimal Cu and Zn Binding Site Sequence in Amyloid Beta Peptides*. Journal of Biological Chemistry 283: 10784-10792.
47. F. Stellato, G. Menestrina, M. Dalla Serra, C. Potrich, R. Tomazzolli, W. Meyer-Klaucke, and S.Morante (2006) *Metal binding*

**SCIENTIFIC
RESPONSIBILITIES
AND
ACHIEVEMENTS**

in amyloids beta peptides shows both intra- and inter-peptide model.
European Biophysical Journal 35: 340-351

2017-2019

Responsible for the “Scientific Case” Working Package for the EuPRAXIA@SPARC_LAB “Conceptual Design Report

2017

Selected among the top 12 projects for the INFN-CSN5 “Young Investigator” call.

2017

Principal Investigator for the Iskra C “METAXA” Project awarded with 200000 core hours at CINECA

2016

Selected among the top 12 projects for the INFN-CSN5 “Young Investigator” call.

2011-2013

Principal Investigator for experiments at the DORIS and Petra III synchrotron

TEACHING EXPERIENCES

- Responsible of the “Physics” practical lectures for the “Physics” course for Biotechnology under the responsibility of Prof. Carla Andreani
University of Rome “Tor Vergata”, Italy –March-June 2019
- Responsible of the “Physics” practical lectures for the “Physics” course for Biotechnology under the responsibility of Prof. Carla Andreani
University of Rome “Tor Vergata”, Italy –March-June 2018
- Cycle of Lectures on ‘Eigen’s Model’ within the ‘Biological Physics’ course under the responsibility of Prof. Silvia Morante,
University of Rome “Tor Vergata”, Italy –November 2015
- Supervisor of a master thesis in Physics
University of Rome “Tor Vergata”, Italy – 2014-2015
- Cycle of Lectures on ‘Eigen’s Model’ within the ‘Biological Physics’ course under the responsibility of Prof. Silvia Morante,
University of Rome “Tor Vergata”, Italy –January 2015
- Cycle of Lectures on “X-Ray Absorption Spectroscopy” within the ‘Biological Physics’ course under the responsibility of Prof. Silvia Morante,
University of Rome “Tor Vergata”, Italy –November 2014
- Supervisor of an Erasmus plus student.
University of Rome “Tor Vergata”, Italy
July-August 2014
- Cycle of Theoretical and Practical Lectures ‘X-Ray Absorption: Theory, Experiments and Data Analysis’ within the ‘Laboratory of Biological Physics’ course under the responsibility of Dr. Velia Minicozzi
University of Rome “Tor Vergata”, Italy – April 2014
- Supervisor of a master thesis in Physics
University of Rome “Tor Vergata”, Italy – 2012-2013
- Supervisor of three students in the DESY summer school program in the years 2011-2013.
- Professor of Biophysics - Course for “Corso di Laurea in Infermieristica”
University of Rome “Tor Vergata”, Italy – November 2009 – February 2010
- Cycle of Lectures on ‘Eigen’s Model’ within the ‘Biological Physics’ course under the responsibility of Prof. Silvia Morante,
University of Rome “Tor Vergata”, Italy – December 2009
- Cycle of Theoretical and Practical Lectures on ‘X-Ray Absorption: Theory, Experiments and Data Analysis’ within the ‘Laboratory of Biological Physics’ course under the responsibility of Dr. Velia Minicozzi
University of Rome “Tor Vergata”, Italy – March-April 2009
- Cycle of Lessons on ‘Eigen’s Model’ within the ‘Biological Physics’ course under the responsibility of Prof. Silvia Morante,
University of Rome “Tor Vergata”, Italy – November 2008
- Cycle of Lectures on ‘Eigen’s Model’ within the ‘Biological Physics’ course under the responsibility of Prof. Silvia Morante

CONFERENCES AND TALKS

University of Rome “Tor Vergata”, Italy – November 2007

Invited Talks

- Department of Biosciences – University of Milan
Milan – Italy – July 2014
- ‘Luci di Sincrotrone’ meeting – CNR
Rome - Italy – April 2014
- 4th Workshop on Imaging Techniques with Synchrotron Radiation’
Bordeaux – France – September 2011
- Karlsruhe Institut of Technology Seminar
Karlsruhe – Germany – April 2011
- Invited speaker at ‘NAST centre’
Roma – Italy – June 2011
- ‘Laboratori Nazionali di Frascati’
Frascati – Italy – June 2011

Contributed Talks

- SIF 2017 – Trento, Italy – September 2017
- CMD14 – Groningen, The Netherlands – September 2016
- XAFS 16 – Karlsruhe, Germany – August 2015
- INFN SUMA meeting
Trento – Italy- February 2015
- Biopjys’14 meeting
Bologna – Italy – September 2014
- SIBPA 2014 Conference
Palermo – Italy – September 2014
- Regional Biophysical Conference 2012
Kladovo – Serbia – September 2012
- BIOPHYS09: Biology and beyond –Arcidosso, Italy -
September 2009
- XAFS 14 -Camerino, Italy - July 2009
- CMD, European Physical Society - Roma, Italy - August 2008
- Acta Biophysica Romana - Roma, Italy - April 2008
- Acta Biophysica Romana - Roma, Italy - February 2006

Poster Presentations

- British Crystallography Association - Loughborough – U.K..
– April 2014
- EBSA 2013 - Lisboa, Portugal- July 2013
- SwissFEL meeting - Bern – Switzerland – November 2011
Coherence 2010 –Warnemünde, Germany–June 2010
- EBSA 2009 -Genova, Italy - July 2009

- SIBPA 2008 - Roma, Italy - September 2008
- 2007 - London, UK - July 2007
- SILS 2007 - Milano, Italy - July 2007
- SIBPA 2006 - Palermo, Italy - September 2006
- MMD 2005 - Genova, Italy - June 2005

RESEARCH EXPERIENCES

- 6 months of Free Electron Laser related research activity at LCLS/SLAC – Stanford, U.S.A. between 2011 and 2013
- Stage at the Centre for Free-Electron Laser Science in Prof. Henry Chapman's group on the subject: *Set up and characterization of an electrospray source for nanoparticles and biomolecules.* (CFEL-DESY - Hamburg, Germany - August-November 2008)
- Stage at the EMBL Hamburg Outstation in Dr. Wolfram Meyer-Klaucke's BioXAS team on the subject: *Operation of the XAS beamline and XANES data analysis.* (EMBL-DESY - Hamburg, Germany - August-September 2007)
- Stage in Dr. Martin Blackledge's group on the subject: *NMR of Proteins: Determination of Protein G 3D Structure using only Residual Dipolar Coupling* (Institut de Biologie Structurale J.P. Ebel - Grenoble, France – November-December 2003)

OTHERS

Referee

- Referee for *International Union of Crystallography Journal*
- Referee for the Proceedings of the National Academy of Science
- Referee for *Analytical and Bioanalytical Chemistry*

Conference Organization

- Scientific & Organizing Committee
Young Researchers Meeting - Rome, Italy – June 2019
- Scientific & Organizing Committee
INFN workshop on Biophysics Researchers Meeting - University of Rome "Tor Vergata", Roma, Italy – December 2017
- Scientific Committee
Young Researchers Meeting - Cagliari, Italy – July 2017
- Scientific Committee
Young Researchers Meeting - SISSA, Trieste, Italy – June 2013
- Scientific Committee
Young Researchers Meeting - SISSA, Trieste, Italy – July 2014
- Scientific Committee Young Researchers Meeting - SISSA, Trieste, Italy – June 2013
- Scientific and Organizing Committee
Young Researchers Meeting in Rome - University of Rome "Tor Vergata", Roma, Italy – January 2012
- Scientific and Organizing Committee
Roman Young Researchers Meeting - University of Rome "La Sapienza", Roma, Italy – February 2010

- Scientific and Organizing Committee
Roman Young Researchers Meeting - University of Rome “Tor Vergata”, Roma, Italy – July 2009
- Organizing Committee
Acta Biophysica Romana - University of Rome “Tor Vergata”, Roma, Italy - February 2006

Memberships

- Member of the Pure and Applied Italian Biophysical Society, S.I.B.P.A.
- Member of the Italian Society for Synchrotron Light (S.I.L.S.)

Prizes

- “Sebastiano e Rita Raeli” Master Degree Prize - Università di Roma “Tor Vergata” – Roma, Italy – June 2007

Il sottoscritto autorizza il trattamento dei dati personali ai sensi del DLGS 196 del 30 giugno 2003 e dell’articolo 13 GDPR ai fini della ricerca e selezione del personale.

Francesco Stellato

