

Antonella Succurro *PhD*

Summary

Young researcher with strong interest in the application of computational models to the biomedical field. Eager to transfer the knowledge and skills acquired working on particle physics analyses. Good team worker, experienced one of the most international research environment during my PhD with the ATLAS collaboration (~3000 scientists) at the CERN laboratories. Passionate about communication and science outreach.

Research Activity

HIGH ENERGY PARTICLE PHYSICS

February 2010 - February 2014

ATLAS experiment

CERN (Switzerland) & IFAE (Spain)

Is our Standard Model (SM) of the fundamental particle interactions complete? Apparently, the answer is “no”. Many theories have been proposed to explain what is currently not understood, like the nature of Dark Matter, or the reason why the Higgs boson is so light. With data from the Large Hadron Collider (LHC) at the CERN laboratory of Geneva, the ATLAS experiment can probe new physics. I worked on various analyses aimed at the discovery (or exclusion) of a signal from a new quark similar to the top quark but with a larger mass. The results were the first to propose a model-independent way for comprehensive searches of vector-like quarks. I was involved also in other projects, in particular I have contributed to various performance studies of the ATLAS Tile Hadronic Calorimeter and for several months I have been responsible for the optimization of data-driven techniques to estimate the contribution of multi-jet events in a particular search channel used by many analyses of the ATLAS collaboration.

Key achievements *Monte Carlo techniques, Statistical Analysis, ROOT, C++, Python, Bash scripting, RCS, Team working, Scientific writing, Written and Oral presentation skills, TWiki documentation*

SYSTEMS BIOLOGY

May 2014 - present

TiMet

University of Aberdeen (UK)

The european TiMet project aims at achieving a better understanding of how plants regulate their methabolism in response to the alternation of day and night. I will be involved in the extention of a dynamic flux balance analysis software simulating microbial colony growth to plants.

Key achievements (expected)

Biology, Flux Balance Analysis, Java, Biochemistry

Professional Experience

Postdoctoral Research Fellow

University of Aberdeen, UK

May 2014 - present

Institut de Física d'Altes Energies & Universitat Autònoma de Barcelona, Spain

Doctoral student

Feb 2010 - Feb 2014

Istituto Nazionale di Fisica Nucleare (INFN) & Università degli Studi di Pavia, Italy

INFN associate

Jun 2009 - Dec 2009

Education

UNIVERSITAT AUTÒNOMA DE BARCELONA (UAB)

Spain

PhD in Particle Physics

2014-02-28, excellent cum Laude

The final dissertation was titled *Probing new physics at the LHC: searches for heavy top-like quarks with the ATLAS experiment* and it was written under the supervision of Prof. Aurelio Juste. Available at <http://www.tdx.cat/handle/10803/133340>.

UNIVERSITÀ DEGLI STUDI DI PAVIA

Italy

Master (Laurea Specialistica) in Particle Physics

2009-12-18, 110/110 cum Laude

The Master thesis was titled *Searches for SUSY signals at the Large Hadron Collider - Light Stop Analysis* and it was written under the supervision of Dr. Giacomo Polesello. Since 2004 I was Alumn of Collegio Ghislieri (<http://www.ghislieri.it/>) and of the Institute for Advanced Study IUSS Pavia (<http://www.iusspavia.it/eng/index.php>) from which I obtained the IUSS Diploma on 2010-05-18, with the thesis titled *Superparticles mass measurement methods at the LHC*, written under the supervision of Dr. Giacomo Polesello and Prof. Giorgio Goggi and valued “Excellent”.

UNIVERSITÀ DEGLI STUDI DI PAVIA
3-year Bachelor (Laurea Triennale) in Physics

Bachelor thesis titled *Decadimenti Deboli dei Quark: la Matrice CKM (Weak Decays of Quarks: the CKM Matrix)*
under the supervision of Prof. Claudio Conta.

Italy
2007-12-14, 110/110

LICEO SCIENTIFICO “T. TARAMELLI”, PAVIA
High School Diploma (Maturità Scientifica)

Italy
2004-07-06, 100/100

Languages

Italian È la mia lingua madre e posso declamare “La Divina Commedia”: *Native speaker*

English Since 2009 english is the main language I use in work environment: *Professional proficiency*

Spanish He aprendido una mezcla de Castellano y Catalán viviendo un año en Barcelona y hablando con amigos, pero nunca lo he estudiado de verdad: *Limited professional proficiency*

German Ich habe Deutsch fünf Jahren in der Schule gelernt, aber ich habe keines in den letzten zehn Jahren gesprochen: *Limited professional proficiency*

French Je comprend un petit peu de française écrit et parlé, mais je ne le parle pas: *Very limited professional proficiency*

Computer skills

OS Linux, Windows

Languages python, C, C++, bash and a little bit of HTML, PHP, Java, MySQL

RCS SVN, Git

Scientific ROOT, pyROOT, Octave

Other L^AT_EX, OpenOffice, Excel, Powerpoint

Scientific skills

Statistics Statistical analysis of big data, discovery and exclusion techniques, model fitting techniques

Monte Carlo Monte Carlo simulation theory and softwares

Detectors Analysis of detector performance and calibration studies

MachineLearning Linear regression, logistic regression, neural networks

Grid computing Parallel computing

Software Software development, maintenance and support

Other Interests

Education Popularization of science, environment, politics

Arts Painting and drawing, writing

Sports African dance, tango, running

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A list of publications and of international conferences, workshops and schools attended is available as attachment.