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Summary

I am a Doctor of physics with 5 years experience in experimental particle physics, with focus on the following areas: particle detectors(commissioning, installation, hardware maintenance, data acquisition, performance tests and analysis), physics analysis, acquisition/monitoring/control systems and vacuum systems. During my experience at CERN, I have succesfully finished all my projects/tasks and developed efficient solutions for problems I encountered.

- I highly value collaborative spirit.
- I am skilled in working in collaborative environment in an efficient manner.
- I can acquire new skills depending on the needs of the project.
- I possess organizational and communication skills that large scale projects/experiments demand.

Professional Experience

Feb, 2014 - ... , CERN - *Beam Line for Schools*, Project Associate
<http://cern.ch/bl4s>

Currently working at BL4S competition with following responsibilities:

- Detector Responsible: Main responsible of the detectors that is used in the beam line, such as Delay Wire Chambers, Lead Glass Calorimeters, Scintillators, Cherenkov Counters. The responsibility consists of performance tests, calibration, commissioning, installation and analysis of detectors.
- DAQ: Implemented a modular acquisition and monitoring software using NIM and VME systems on hardware, and ATLAS TDAQ Framework on the software side.
- Physics Analysis: Developed a C++ and ROOT based analysis software. The software is highly modifiable via configuration files for use in next years competition with different experimental setups.
- Optimization of the experiment: Performed the feasibility study on the physics of the winning experiment and suggested improvements to the setup.
- Organization: Organized meetings with experts, handled the gas installation, radioactive source loans and mechanical/electrical work.
- Installation and running of the experiment: The experimental setup is installed at East Area, T9 beamline and 2 different experiments was run for a week, during which beam parameters were modified according to needs of experiments.
- Documentation: Prepared detailed documentation and Twiki pages about every aspect of the project to ensure the knowledge transfer for next years.

2009 - 2014 , CERN - *CERN Axion Solar Telescope*, Doctoral Researcher
As part of my doctoral studies, I worked in the CAST experiment, spending most of my time in CERN. My responsibilities consisted of:

- Micromegas detectors: Took responsibility of 2 micromegas detectors for installation and maintenance, data analysis, data acquisition system, upgrades and vacuum system.
- CAST Slow Control System: Been the main responsible of the Labview based acquisition system for hardware maintenance, installation of new sensors and software upgrades.
- CFD Simulations: Run CFD simulations together with CERN EN-CV group, analysed and interpreted the results.
- Physics Analysis: Developed new methods for interpreting CAST data using results of the CFD simulations.
- Magnet movement system: Organized and analysed Grid/Survey measurements which assure the CAST magnets solar tracking accuracy, developed new analysis methods, assisted the Solar Filming.
- Shift/Run Coordination: Did the shift coordination during 2012, and run coordination during several periods of data taking as the on-call responsible of the experiment.
- CAST Contact person: Trained official CERN guides at CAST, maintained the visitor area, updated CAST posters, maintained the CAST official website.

- 2009 - 2012, *Bogazici University*, Teaching Assistant, Part-time
Taught laboratory courses on introductory physics and electronics.
- 2003 - 2005 , *Koc University*, Laboratory Research Assistant
Assisted laboratory experiments in the electronics laboratory.
- 2003 , *Koc University*, Laboratory Assistant
Assisted laboratory courses on introductory physics.

Education and Qualifications

- 2009 - 2013 , *PhD. in Physics, Bogazici University & CERN Axion Solar Telescope*
Thesis Title: Search for Axions with Micromegas Detectors in the CERN CAST Experiment
[CERN-THESIS-2013-205]
Supervisor: Prof. Metin Arik
- 2005 - 2008, *M.S. in Physics, Bogazici University*
Thesis Title: Unitary Matrix Hopf Algebras and Theta-Deformed Fermion Algebra
Supervisor: Prof. Metin Arik
- 2000 - 2005 , *B.S. in Physics, Koc University* Graduated as top ranking student.

Technical Skills

Programming : C++, Python, ROOT, php, Html, L^AT_EX, Bash

Data Acquisition : NIM, VME, National Instruments hardware, Labview, ATLAS TDAQ Framework

Vacuum Systems : General vacuum knowledge, turbo Pumps, membrane pumps

Operating Systems: Linux, Windows

Office Software : MS. Office, Libreoffice, Openoffice

Other : Doxygen, web2py

Trainings and Courses

2013 June,	tCSC - Thematic CERN School of Computing on High Performance Computing, Split
2012 August,	Euroscipy - European Conference for Scientists Using Python - Advanced Tutorial, Brussels
2011 January ,	ISTAPP - International School of Theory and Analysis in Particle Physics, Istanbul
2010 July ,	Euroscipy - European Conference for Scientists Using Python - Basic Tutorial, Paris
2010 January ,	ISOTDAQ - International School on Trigger and Data Acquisition, Ankara
2009 September,	LabVIEW Basics I-II Course, CERN, Geneva

Selected Publications

Probing the eV-Mass Range for Solar Axions with CAST

The CAST Collaboration, IEEE Nucl.Sci.Symp.Conf.Rec, 342-346, 2010.

Search for Sub-eV Mass Solar Axions by the CERN Axion Solar Telescope with ^3He Buffer Gas

The CAST Collaboration, Phys. Rev. Lett., 107, 261302, 2011.

The New Micromegas X-ray Detectors in CAST

Tomás, A., et al., X-Ray Spectrometry, 40, 240-246, 2011.

New Micromegas for Axion Searches in CAST

Dafni, T., et al., Nucl. Instrum. Meth. A, 628, 172-176, 2011.

Latest Results and Prospects of the CERN Axion Solar Telescope

Irastorza, I., et al., J. Phys.: Conf. Ser., 309, 012001, 2011.

Performance of Micromegas Detectors in the CAST Experiment

Yildiz, C., et al., J. Phys.: Conf. Ser., 347, 012029, 2012.

The Discrimination Capabilities of Micromegas Detectors at Low Energy

Iguaz, F., et al., Proceedings of TIPP2011, 37, 1079-1086, 2012.

CAST Microbulk Micromegas in the Canfranc Underground Laboratory

Tomas, A., et al., Proceedings of TIPP2011, 37, 478-482, 2012.

Future Axion Searches with the International Axion Observatory (IAXO)

Irastorza, I., et al., J. Phys.: Conf. Ser., 460, 012002, 2013.

CAST Solar Axion Search with ^3He buffer gas: Closing the hot dark matter gap

The CAST Collaboration, Phys.Rev.Lett., 112, 091302, 2014.

Low background x-ray detection with Micromegas for axion research Tomás, A., et al., JINST 9 (2014) P01001.

Conceptual Design of the International Axion Observatory (IAXO)

Irastorza, I., et al., JINST 9 (2014) T05002.

Talks/Posters

X-Ray Detectors of the CAST Experiment

13th Topical Seminar on Innovative Particle and Radiation Detectors, Siena, 2013

Performance of micromegas detectors in the CAST Experiment

2nd International Conference on Particle Physics, Istanbul, 2011

Language Skills

Turkish, *Native*

English, *Fluent*

French, *Intermediate*

Spanish, *Intermediate*

Awards and Honors

2012,	Berkol Doğan Award - Bogazici University Physics Department
2005-2007,	TUBITAK Domestic Scholarship for Masters
2005,	Top Ranking Student Award - Koc University Physics Department
2000-2005,	Vehbi Koc Scholarship - Koc University

Personal

Citizen of Republic of Turkey.

A1 and B driving licence.

Official CERN guide since 2011.

Interests

Rock climbing, Alpinism, Hiking, Skiing

Music, percussion instruments

References

References are available upon request