

# ALAETTIN SERHAN METE

## PERSONAL DATA

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PLACE AND DATE OF BIRTH: Ankara, Turkey | 30 April 1984  
ADDRESS: 355 Rue Simone Veil, Saint-Genis-Pouilly, 01630, France  
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## EDUCATION

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2006–2012 | Ph.D. in PHYSICS - **Iowa State University**, Ames, IA  
Adviser : Prof. James H. Cochran  
Thesis Title : “*Search for a heavy charged gauge boson decaying to a muon and a neutrino in  $1\text{ fb}^{-1}$  of proton-proton collisions at  $\sqrt{s} = 7\text{ TeV}$  using the ATLAS Detector*”, [CERN-THESIS-2012-063](#)  
2002–2006 | B.Sc. in PHYSICS, **Middle East Technical University**, Ankara  
Graduation Project Supervisor : Prof. Namık Kemal PAK  
Graduation Project Title : “*Time Dependent Wave Packet Collisions*”  
HIGH HONOR STUDENT

## POSITIONS HELD

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2017– | Assistant Project Scientist, Department of Physics and Astronomy,  
**University of California, Irvine, CA, USA**  
2012–2017 | Post-Doctoral Research Scholar, Department of Physics and Astronomy,  
**University of California, Irvine, CA, USA**  
2008–2012 | Research Assistant, Department of Physics and Astronomy,  
**Iowa State University**, Ames, IA, USA and  
**Brookhaven National Laboratory**, Upton, NY, USA (since 2009)  
2006–2008 | Teaching Assistant, Department of Physics and Astronomy,  
**Iowa State University**, Ames, IA, USA

## RESEARCH EXPERIENCE

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### COMPUTING, SOFTWARE AND TRIGGER

|                              |  |             |
|------------------------------|--|-------------|
| Convener                     | HEP Software Foundation Software Tools Working Group             | (2018– )    |
| Software Developer/ Convener | ATLAS Software Performance Optimization Team (SPOT)              | (2017– )    |
| Software Developer           | ATLAS New Small Wheel (NSW) sTGC trigger simulation              | (2015–2017) |
| Software Developer           | ATLAS $E_{\text{T}}^{\text{miss}}$ Run-II EDM and reconstruction | (2014–2017) |
| Trigger Monitoring Expert    | ATLAS Online Trigger Monitoring ( <i>OnlineRatesChecker</i> )    | (2011–2012) |
| DAQ/HLT Shifter              | ATLAS Online DAQ/HLT shifts                                      | (2010–2011) |

### PHYSICS ANALYSIS

|                                |   |             |
|--------------------------------|---|-------------|
| Analyzer                       | ATLAS 2L $hh \rightarrow WWbb$ search                           | (2018– )    |
| Editorial Board Member         | ATLAS compressed SUSY EWK scenarios search                      | (2016– )    |
| Analysis Contact               | ATLAS Stop2L SUSY search (Moriond/LHCP 2017)                    | (2016–2017) |
| Editorial Board Member         | ATLAS $2\tau$ SUSY EWK search                                   | (2016–2018) |
| Conference Note Editor         | ATLAS Stop2L SUSY search (ICHEP 2016)                           | (2016)      |
| Paper Editor                   | ATLAS legacy of Run-I SUSY EWK searches                         | (2015)      |
| Subgroup Convener              | ATLAS SUSY EWK searches   | (2014–2015) |
| Analysis Contact/ Paper Editor | ATLAS 2L SUSY EWK search  | (2013–2014) |
| Paper Editor                   | ATLAS $W' \rightarrow \ell\nu$ $\sqrt{s} = 8\text{ TeV}$ search | (2014)      |
| Analysis Contact/ Paper Editor | ATLAS $W' \rightarrow \ell\nu$ $\sqrt{s} = 7\text{ TeV}$ search | (2011)      |

## PROGRAMMING

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Operating Systems : Mac OS X - Linux (e.g. SLC6/CC7/Ubuntu) - Windows (e.g. XP/Vista/7/8/10)  
Languages : C, C++, Python, Java, Bash scripting, (No)SQL, R,  $\text{\LaTeX}$   
Softwares : ATLAS Gaudi/Athena, ROOT, Valgrind (Callgrind, Memcheck, Massif), KCacheGrind, GNU Project Debugger (gdb), Perf, Intel® Parallel Studio XE, GPerfTools, CMake, Docker, Singularity

## PUBLICATIONS

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### COMPUTING AND SOFTWARE

- ATLAS Collaboration, “Using Monte Carlo overlay to describe additional proton-proton interactions in ATLAS simulation”, *in preparation*, (2019)
- Graeme A. Stewart and Alaettin Serhan Mete, “The HEP Software Foundation/PROcess MONitor (prmon)”, (2019), <http://doi.org/10.5281/zenodo.2556701>
- The HEP Software Foundation, “A Roadmap for HEP Software and Computing R&D for the 2020s”, Comput. Softw. Big. Sci. (2019) 3: 7, [arxiv:1712.06982](https://arxiv.org/abs/1712.06982) [hep-ex]

### PHYSICS ANALYSIS

- ATLAS Collaboration, “Search for electroweak production of supersymmetric particles in final states with two or three leptons at  $\sqrt{s} = 13$  TeV with the ATLAS detector”, Eur. Phys. J. **C78** (2018) 995, [arxiv:1803.02762](https://arxiv.org/abs/1803.02762) [hep-ex]
- ATLAS Collaboration, “Search for direct top squark pair production in final states with two leptons in  $\sqrt{s} = 13$  TeV  $pp$  collisions with the ATLAS detector”, Eur. Phys. J. **C77** (2017) 898, [arxiv:1708.03247](https://arxiv.org/abs/1708.03247) [hep-ex]
- ATLAS Collaboration, “Search for supersymmetry in final states with two same-sign or three leptons and jets using 36 fb<sup>-1</sup> of  $\sqrt{s} = 13$  TeV  $pp$  collision data with the ATLAS detector”, J. High Energy Phys. **09** (2017) 084, [arxiv:1706.03731](https://arxiv.org/abs/1706.03731) [hep-ex]
- ATLAS Collaboration, “Dark matter interpretations of ATLAS searches for the electroweak production of supersymmetric particles in  $\sqrt{s} = 8$  TeV proton-proton collisions”, J. High Energy Phys. **09** (2016) 175, [arxiv:1608.00872](https://arxiv.org/abs/1608.00872) [hep-ex]
- ATLAS Collaboration, “Search for the electroweak production of supersymmetric particles in  $\sqrt{s} = 8$  TeV  $pp$  collisions with the ATLAS detector”, Phys. Rev. **D93** (2016) 052002, [arxiv:1509.07152](https://arxiv.org/abs/1509.07152) [hep-ex]
- J. Abdallah *et al.*, “Simplified Models for Dark Matter Searches at the LHC”, Phys. Dark Univ. **9-10** (2015) 8-23, [arxiv:1506.03116](https://arxiv.org/abs/1506.03116) [hep-ph]
- ATLAS Collaboration, “Search for direct pair production of a chargino and a neutralino decaying to the 125 GeV Higgs boson in  $\sqrt{s} = 8$  TeV  $pp$  collisions with the ATLAS detector”, Eur. Phys. J. **C75** (2015) 208, [arxiv:1501.07110](https://arxiv.org/abs/1501.07110) [hep-ex]
- ATLAS Collaboration, “Search for new particles in events with one lepton and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, J. High Energy Phys. **09** (2014) 037, [arxiv:1407.7494](https://arxiv.org/abs/1407.7494) [hep-ex]
- ATLAS Collaboration, “Search for the direct production of charginos, neutralinos and staus in final states with at least two hadronically decaying taus and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, J. High Energy Phys. **10** (2014) 096, [arxiv:1407.0350](https://arxiv.org/abs/1407.0350) [hep-ex]
- ATLAS Collaboration, “Search for direct production of charginos, neutralinos and sleptons in final states with two leptons and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, J. High Energy Phys. **05** (2014) 071, [arxiv:1403.5294](https://arxiv.org/abs/1403.5294) [hep-ex]
- ATLAS Collaboration, “Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in  $\sqrt{s} = 8$  TeV  $pp$  collisions with the ATLAS detector”, J. High Energy Phys. **04** (2014) 169, [arxiv:1402.7029](https://arxiv.org/abs/1402.7029) [hep-ex]
- ATLAS Collaboration, “ATLAS search for a heavy gauge boson decaying to a charged lepton and a neutrino in  $pp$  collisions at  $\sqrt{s} = 7$  TeV”, Eur. Phys. J. **C72** (2012) 2241, [arxiv:1209.4446](https://arxiv.org/abs/1209.4446) [hep-ex]

- ATLAS Collaboration, “Search for direct production of charginos and neutralinos in events with three leptons and missing transverse momentum in  $\sqrt{s} = 7$  TeV  $pp$  collisions with the ATLAS detector”, Phys. Lett. **B718** (2013) 841, [arxiv:1208.3144 \[hep-ex\]](#)
- ATLAS Collaboration, “Search for direct slepton and gaugino production in final states with two leptons and missing transverse momentum with the ATLAS detector in  $pp$  collisions at  $\sqrt{s} = 7$  TeV”, Phys. Lett. **B718** (2013) 879, [arxiv:1208.2884 \[hep-ex\]](#)
- ATLAS Collaboration, “Search for a heavy gauge boson decaying to a charged lepton and a neutrino in  $1\text{ fb}^{-1}$  of  $pp$  collisions at  $\sqrt{s} = 7$  TeV using the ATLAS detector”, Phys. Lett. **B705** (2011) 28, [arxiv:1108.1316 \[hep-ex\]](#)
- ATLAS Collaboration, “Search for high-mass states with lepton plus missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 7$  TeV with the ATLAS detector”, Phys. Lett. **B701** (2011) 50, [arxiv:1103.1391 \[hep-ex\]](#)
- S.K. Gupta, A.S. Mete and G. Valencia, “CP violating anomalous top quark couplings at the LHC”, Phys. Rev. **D80** (2009) 034013, [arxiv:0905.1074 \[hep-ph\]](#)

## CONFERENCE NOTES, PROCEEDINGS AND REPORTS

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- A. S. Mete, “Searches for Higgsinos and related challenges in ATLAS”, 53<sup>rd</sup> Rencontres de Moriond on Electroweak Interactions and Unified Theories, [ATL-PHYS-PROC-2018-027 \(2018\)](#)
- ATLAS Collaboration, “Search for electroweak production of supersymmetric particles in the two and three lepton final state at  $\sqrt{s} = 13$  TeV with the ATLAS detector”, [ATLAS-CONF-2017-039 \(2017\)](#)
- ATLAS Collaboration, “Search for electroweak production of charginos and neutralinos in multilepton final states at  $\sqrt{s} = 13$  TeV with the ATLAS detector”, [ATLAS-CONF-2016-096 \(2016\)](#)
- ATLAS Collaboration, “Search for direct top squark pair production and Dark Matter production in final states with two leptons in  $\sqrt{s} = 13$  TeV  $pp$  collisions using  $13\text{ fb}^{-1}$  of ATLAS data”, [ATLAS-CONF-2016-076 \(2016\)](#)
- ATLAS Collaboration, “Search for supersymmetry with two same-sign leptons or three leptons using  $13.2\text{ fb}^{-1}$  of  $\sqrt{s} = 13$  TeV  $pp$  collision data collected by the ATLAS detector”, [ATLAS-CONF-2016-037 \(2016\)](#)
- ATLAS Collaboration, “Search for high-mass states with one lepton plus missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, [ATLAS-CONF-2014-017 \(2014\)](#)
- ATLAS Collaboration, “Search for direct-slepton and direct-chargino production in final states with two opposite-sign leptons, missing transverse momentum and no jets in  $20\text{ fb}^{-1}$  of  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, [ATLAS-CONF-2013-049 \(2013\)](#)
- A. S. Mete, “New Physics searches with ATLAS”, EPJ Web Conf. **70** (2014) 00050, [ATL-PHYS-PROC-2012-201 \(2012\)](#)
- ATLAS Collaboration, “Search for high-mass states with one muon plus missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 7$  TeV with the ATLAS detector”, [ATLAS-CONF-2011-082 \(2011\)](#)

## TALKS

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### COMPUTING AND SOFTWARE

- “Highlights from HEP Software Foundation Workshop”, ATLAS Weekly/Open EB (4/2019)
- “Metrics, Measurements and Tools”, 2019 Joint HSF/OSG/WLCG Workshop (3/2019)
- “Software Performance Optimization Group Report”, ATLAS Software & Computing Week Plenary (12/2018)
- “Multi-process/thread Safe Performance Monitoring/Profiling”, Trigger Core Software (8/2018)
- “Meltdown-Spectre: Updates on Performance Measurements”, HEPiX Benchmarking Working Group (01/2018)
- “Technical Performance Comparison between Release 21.0 and Master”, AthenaMT Developer Workshop (9/2017)

### PHYSICS ANALYSIS

- “Higgsino searches and related challenges in ATLAS”, 53<sup>rd</sup> Rencontres de Moriond on Electroweak Interactions and Unified Theories (3/2018), **(On behalf of the ATLAS Collaboration)**

- “Searches for supersymmetry with electroweak and third generation squark production at ATLAS”, CERN-LHC Seminar (5/2017), **(On behalf of the ATLAS Collaboration)**
- “SUSY at ATLAS”, (Re)interpreting the results of new physics searches at the LHC (12/2016), **(On behalf of the ATLAS Collaboration)**
- “SUSY 3<sup>rd</sup> Generation Review”, ATLAS SUSY Workshop at Sussex (4/2016)
- “EWK SUSY Searches”, ATLAS Physics Workshop - Ready for Run-2 (11/2014)
- “Searches for electroweakinos with Higgs in the final state”, ATLAS BSM Higgs Workshop (10/2014)
- “Search for dark matter in the mono-lepton channel at the LHC”, Dark Matter @ LHC (9/2014), **(On behalf of the ATLAS and CMS Collaborations)**
- “ATLAS Direct Electroweak SUSY Search in 2 OS Leptons + Missing Transverse Momentum Final State”, UC Irvine Particle Physics Seminar (3/2014)
- “ATLAS Direct Electroweak Searches”, CERN Collider Cross Talk (8/2013)
- “2 Leptons ( $e/\mu/\tau$ ) + MET”, ATLAS SUSY Workshop at Nikhef (4/2013)
- “New Physics searches with ATLAS”, International Conference on New Frontiers in Physics (6/2012), **(On behalf of the ATLAS Collaboration)**
- “Background studies and spin correlation expectations in  $t\bar{t}$  events in the  $e/\mu$  decay channel at the LHC”, American Physical Society April Meeting (5/2009), **(On behalf of the ATLAS Collaboration)**