

CHRISTOS LAZARIDIS

38 Rue des Cheminets, Pregnin 01630, Saint Genis-Pouilly, France

+41 (76) 26 82 453 • christos.lazaridis@gmail.com • http://chrislaz.net

EDUCATION

Physics PhD

University of Wisconsin-Madison

August 2011

Jets produced in association with Z-bosons in CMS at the LHC

Advisor: Wesley H. Smith

Physics MSc

University of Wisconsin-Madison

December 2007

Ptychion in Physics

Aristotle University of Thessaloniki

July 2005

Cumulative GPA: 7.49/10.00

Diploma Thesis on *Artificial Neural Networks and Applications*

Supervisor: Christos Eleftheriadis

WORK EXPERIENCE

University of Wisconsin-Madison - CMS group

(2006 - 2011)

Research Assistant

- **Supervisors:** W. H. Smith, S. R. Dasu
- Thesis analysis on jet production in association with $Z \rightarrow e^+e^-$
- Trigger efficiency studies using ECAL activity trigger bits with early collision data
- Worked on the CMS Regional Calorimeter Trigger
- RCT hardware monitoring and configuration front-end GUI
- Developed Phase I of the CMS Level 1 Trigger Alarms & Monitoring project
- Integrated common CMS Level 1 trigger setup to provide common monitoring information
- CMS Level-1 Trigger setup librarian 2008-2010

University of Wisconsin-Madison - Physics Dept.

(2005-2006)

Teaching Assistant

- Teaching discussion and lab sections for non-science and engineering majors (2 semesters)
- Organizing course/lab material

CERN - CAST Experiment

(2004)

Summer School

- **Supervisors:** K. Zioutas, T. Papaevangelou
- Detector simulation with GEANT : *Thermal neutron background effect on the CAST calorimeter*

Aristotle University of Thessaloniki - Physics Dept.

(1999-2004)

Teaching Assistant

- **Supervisor:** G. Voutsas
- Applied informatics laboratory course
- Teaching operating systems, word processing, mathematical packages
- Assisted in organizing/creating lab material; teaching lab sections

Aristotle University of Thessaloniki - Physics Dept.

(2003)

Practical Training

- Computer assembly/repair

PRESENTATIONS

- Talk on "W/Z + Jets Production" - 2011 Workshop on Recent Advances in Particle Physics and Cosmology, Patras, Greece
- Poster on "W/Z + Jets production measurements with 7 TeV pp collisions data at CMS experiment" - 2010 LHC Days, Split, Croatia

- Talk on “Z Boson Production with the CMS Detector in pp Collisions at $\sqrt{s} = 7$ TeV” - 2010 Workshop on Recent Advances in Particle Physics and Cosmology, Thessaloniki, Greece
- Organized and presented “Trigger Supervisor Monitoring & Alarms Workshop”, December 2010, CMS Internal Workshop
- Many presentations within the CMS collaboration on Z(ee)+Jets analysis, Level-1 trigger performance and Trigger Supervisor software

CONTRIBUTIONS TO PUBLICATIONS

- The CMS Collaboration. Rates of Jets Produced in Association with W and Z Bosons. *CMS-PAS-EWK-10-012* (TBP)
- The CMS Collaboration. Measurements of inclusive W and Z cross sections in pp collisions at $\sqrt{s} = 7$ TeV. *Journal of High Energy Physics*, 2011(1):1–40, 2011. 10.1007/JHEP01(2011)080
- Marc Magrans de Abril et. al. The architecture of the CMS Level-1 Trigger Control and Monitoring System using UML. CHEP 2010
- Pamela Klabbers et. al. Operation and Monitoring of the CMS Regional Calorimeter Trigger. TWEPP-08
- J. M. Hernández et. al. CMS Monte Carlo production in the WLCG computing grid. *Journal of Physics: Conference Series*, 119(5):052019, 2008
- Pamela Klabbers et. al. Integration of the CMS Regional Calorimeter Trigger Hardware into the CMS Level-1 Trigger. TWEPP-07
- A. Mohapatra et. al. CMS Monte Carlo production operations in a distributed computing environment. *Nuclear Physics B - Proceedings Supplements*, 177-178(0):324–325, 2008. Proceedings of the Hadron Collider Physics Symposium 2007

CONTRIBUTIONS TO CMS INTERNAL DOCUMENTS

- A Study of W/Z+jets Events Using Electron Modes (CMS AN-2008/093, CMS AN-2009/170)
- Study of Production of Vector Bosons and Jets at 7 TeV for ICHEP2010 Conference (CMS AN-2010/136)
- Trigger efficiency correction factors for inclusive W/Z cross section measurement (CMS AN-2010/246)
- Updated Measurements of the Inclusive W and Z Cross Sections at 7 TeV (CMS AN-2010/264)
- Measurement of the Associated Production of Vector Bosons and Jets in proton-proton collisions at $\sqrt{s} = 7$ TeV (CMS AN-2010/413)
- Analysis of V+jets production in the electron channels (CMS AN-2011/136)
- Trigger Supervisor documentation.
<https://twiki.cern.ch/twiki/bin/view/CMS/TriggerSupervisor>

SKILLS

- **Programming languages:** C++, Python, basic Java skills, shell scripting
- **Platforms:** Linux, MS-Windows
- Proficiency in English, Greek (mother tongue), basic knowledge of (speaking/reading) French

OUTREACH ACTIVITIES

- Official CERN guide since May 2009 and visits conferencier since May 2010
- Creator and maintainer of the official CMS Facebook fan page August 2008 – May 2011

Research Statement

Christos Lazaridis

September 13, 2011

Physics and computers were two subjects that captivated me since childhood. I was lucky to have inspiring instructors at school to teach me the first, and insightful parents to help me develop the second by getting me my first computer when I was only twelve years old.

These two inclinations matched perfectly during my undergraduate studies at the Physics department of the Aristotle University of Thessaloniki. There, I worked as a teaching assistant under Prof. G. Voutsas in the computing lab course since my first semester, and later Prof. C. Eleftheriadis guided me through my first steps in GEANT Monte Carlo simulations; a skill that I had the opportunity to put into use as a CERN summer student in 2004, working for the CAST experiment.

During my graduate studies with the UW-Madison CMS group, under the supervision of Professors W. Smith and S. Dasu, I had the luck to contribute to some very interesting projects. Being involved with the Level-1 CMS Regional Calorimeter Trigger, I developed the subsystem's GUI that is used during operations based on a common framework called Trigger Supervisor (TS). I contributed in the TS framework by developing the first phase of central Alarms & Alerts under the guidance of Marc Magrans de Abril. The creation of the common setup for all Level-1 trigger subsystems was my responsibility and I maintained it through 2008-2010. During my 3+ year presence at CERN I did numerous trigger shifts and RCT expert-on-call shifts. Earlier (2007), I had the opportunity to work on official CMS GRID production assisting Dr. Ajit Mohapatra.

Of course, during these years I was doing physics as well! My first, early introduction to physics analyses and the CMS framework was by studying Higgs decays to two Z bosons. While this was an interesting channel to work on, the LHC was behind schedule so I switched to studying Z+Jets associated production, which became the topic of my PhD thesis. My first contribution came with the first inclusive W/Z CMS results for ICHEP 2010, where I participated by determining L1 calorimeter trigger efficiencies using the ECAL activity bits trigger. As integrated luminosity increased, I started working on the Z+Jets electron channel focusing on the unfolding of the jet multiplicity and the momentum of the leading jet and validating results of the group performing the event selection. Developing the analysis urged me to learn more about electroweak interactions and jets, but also about electron reconstruction, jet clustering algorithms and fine-tuning details of an analysis to get an optimal result.

Integrating my past experiences, I would want to focus more on the computing side of physics, either by working on operations software to take advantage of what I learned from my involvement with the CMS trigger software, or by working closer to the simulation side and particle-matter interactions packages and algorithms.