Edmund A. Berry | Résumé

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Experience

Brown University **Providence, RI**
Postdoctoral research associate on the CMS experiment *2014-Present*
I am based in Geneva, Switzerland, where I am a key member of the CMS experiment: a collaboration of over 3,500 physicists studying high energy particle collisions at the European Organization for Nuclear Research (CERN).
Detailed achievements:

- Supervisor: Dr. Greg Landsberg
- Data analysis leader
  - Primary author and analyst of multiple searches for first generation leptoquarks: subatomic particles whose existence is predicted by some theories, but which have not yet been observed.
  - Lead extensive data analysis with a team of physicists
  - Edited and defended publication drafts during several stages of peer review
- Data analysis software developer
  - Lead developer and administrator of analysis code used by several different searches for exotic particles at CERN
  - Developing and testing code (C++ and Python) with frequent and timely updates, in order to keep up with changing data-taking conditions
- Detector group leader
  - Leader of a team of physicists working in the "HCAL Prompt Feedback Group"
  - Working with a team to deliver quick solutions to problems affecting an essential detector subsystem
  - Preparing the CMS experiment for data taking in 2015
- Reviewer of physics analyses
  - Invited to critically review several measurements and a search for exotic particles

Education

Princeton University **Princeton, NJ**
Ph.D., Physics *2007-2014*
Based in Geneva, Switzerland. Member of the CMS experiment. Graduated in January, 2014.
Detailed achievements:

- Advisor: Dr. Christopher Tully
- Thesis: Search for the Pair Production of First Generation Scalar Leptoquarks with the CMS Detector
- Data analysis leader
  - Primary author and analyst of a search for first generation leptoquarks
  - Similar to work now performed as an employee of Brown University
- Subsystem coordinator
  - Part of a select team of physicists coordinating operations and data-taking for an essential detector subsystem
  - Engaged in quick problem-solving to ensure smooth data collection
  - Received an award from the CMS experiment for this effort
- Run Field Manager
  - Invited to coordinate operations and data-taking for the entire CMS experiment in Sept. 2011 and July 2012
  - Coordinated major detector subsystems and 24-hour shift crews
  - Engaged in quick problem-solving to ensure smooth data collection
- Systems administrator
  - Responsible for installation and maintenance of Linux servers for the Princeton research group at CERN

University of Chicago **Chicago, IL**
B.A., Physics, Mathematics *2003-2007*
Based in Chicago, IL. Member of the CDF experiment.
Detailed achievements:

- Advisor: Dr. Young-Kee Kim, Fermilab Deputy Director
- Thesis: $D^0 \to \mu\mu$ Search using the Hadronic B trigger at CDF
- Dean's list, all terms. Overall GPA 3.4. Physics GPA 3.5.
- Graduated with general and Physics departmental honors.
- Primary author and analyst of a search for flavor-changing neutral currents: a rare physics process.

Awards

CMS Achievement Award **CMS Experiment, CERN**
Recognition of work related to a critical detector subsystem *2012*

Fermilab Today: Featured CMS Result **CMS Experiment, CERN**
Recognition of work leading to my Ph.D. thesis by Fermilab *2012*
`http://www.fnal.gov/pub/today/archive/archive_2012/today12-10-12.html`

Fermilab Today: Result of the Week **CDF Experiment, Fermilab**
Recognition of work leading to my B.A. thesis by Fermilab *2011*
`http://www.fnal.gov/pub/today/archive/archive_2011/today11-02-03.html`

Technical skills

Operating systems: Linux, Mac OS X, Windows

Languages: C++ (primary language), Python, shell scripts, LaTeX

Office software: LibreOffice, Microsoft Office

Publications

"Updated Search for the Flavor-Changing Neutral-Current Decay $D^0 \to \mu^+\mu^-$," *Physical Review*, vol. D82, p. 091105, 2010.

"Search for Pair Production of First- and Second-generation Scalar Leptoquarks in pp Collisions at $\sqrt{s} = 7$ TeV," *Physical Review*, vol. D86, p. 052013, 2012.

"Search for Heavy Resonances with Leptons and Jets at CMS," *Proceedings of Science*, vol. EPS-HEP2013, p. 260, 2014.