

Prof. Christopher S. Hill

3048 Physics Research Building
191 W. Woodruff Ave.
Columbus, OH 43210-1117

Office: (614) 688-7512
Email: chill@physics.osu.edu

Academic Appointments

- Associate Professor of Physics, *The Ohio State University*, 2010-
- Reader in Physics, *University of Bristol*, 2009-2010
- Senior Lecturer in Physics, *University of Bristol*, 2007-2009
- Lecturer in Physics, *University of Bristol*, 2006-2007
- Post-doctoral Research Fellow, *University of California at Santa Barbara*, 2001-2006

Education

- Ph.D. in Physics, *University of California, Davis, USA*, 2001
- M.S. in Physics, *University of California, Davis, USA*, 1998
- A.B. in Physics and Philosophy, *Dartmouth College, USA*, 1994

Research

I am an experimental high energy physicist. My research aims to understand the fundamental constituents of matter and their interactions. I am a leading member of one of the premier high energy physics experiments in the world, the CMS experiment, where I study the energy frontier with proton-proton collisions provided by the LHC at CERN (Geneva, Switzerland). On July 4, 2012 my collaborators and I announced the discovery of the Higgs boson, a new type of fundamental particle that is believed to be responsible for the origin of mass. This historic achievement received worldwide media attention. *Science* called this discovery “the breakthrough of the year” for 2012.

Selected Publications:

1. “*Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC*” S. Chatrchyan *et al.* [CMS Collaboration]. *Phys. Lett. B* **716**, 30 (2012)
2. “*A new boson with a mass of 125 GeV observed with the CMS experiment at the Large Hadron Collider*” S. Chatrchyan *et al.* [CMS Collaboration]. *Science* **338**, 1569 (2012).
3. “*Search for fractionally charged particles in pp collisions at $\sqrt{s} = 7$ TeV*” S. Chatrchyan *et al.* [CMS Collaboration]. *Phys. Rev. D* **87**, 092008 (2013)
4. “*Search for stopped long-lived particles produced in pp collisions at $\sqrt{s} = 7$ TeV*” S. Chatrchyan *et al.* [CMS Collaboration]. *JHEP* **1208**, 026 (2012)

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5. “Search for charge-asymmetric production of W' bosons in top pair + jet events from pp collisions at $\sqrt{s} = 7$ TeV” S. Chatrchyan *et al.* [CMS Collaboration]. Phys. Lett. B **717**, 351 (2012)
6. “Search for Stopped Gluinos in pp collisions at $\sqrt{s} = 7$ TeV” V. Khachatryan *et al.* [CMS Collaboration]. Phys. Rev. Lett. **106**, 011801 (2011)
7. “Measurement of the Top Quark Mass in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV using the Decay Length Technique” D. Acosta *et al.* [CDF Collaboration], Phys. Rev. D **75**, 071102(R) (2007)
8. “A Method for Measurement of the Top Quark Mass using the Mean Decay Length of b -hadrons in $t\bar{t}$ Events” C. S. Hill, J. R. Incandela and J. M. Lamb, Phys. Rev. D **71**, 054029 (2005)

Selected Professional Activities:

- CMS Deputy Physics Coordinator (2012-2014)
- CMS Extended Executive Board (2012-2014)
- USCMS Upgrade Steering Committee (current)
- Convener, CMS Exotica group (2010-2012)
- Convener, CMS V +jets group (2008-9)
- Project Leader, CDF Silicon Detector (2001-2002)
- Reviewer, various funding agencies (DOE, STFC, NERSC, FWO) (current)
- International Scientific Committee, BOOST Conferences, Valencia, Spain (2012) and Phoenix, AZ (2013)
- International Advisory Committee, Time and Matter 2013, Venice, Italy (2013)
- Member, American Association for Advancement of Science
- Member, American Physical Society, Division of Particles and Fields

Recent Talks:

- “The Evolution of the LHC Program”, Plenary Talk, Bi-Annual Meeting of the Division of Particles & Fields of the APS, Santa Cruz, CA, August 13, 2013.
- “The Hunt for the Higgs: Has the Origin of Mass Been Found?”, Symposium Speaker, AAAS Annual Meeting, Boston, MA, February 8, 2013.
- “New Results from CMS”, Plenary Talk, Kruger 2012, Kruger National Park, South Africa, December 5, 2012.
- “The Discovery of the Higgs Boson”, Colloquium, The Ohio University, Athens, OH, September 21, 2012.
- “The Discovery of the Higgs Boson”, Colloquium, The Ohio State University, Columbus, OH, August 28, 2012.
- “Searches for Fractionally Charged Particles”, New Particle Physics at the LHC and Its Connection to Dark Matter, ACP, Aspen, CO, August 16, 2012.
- “State of CMS Physics”, CMS 2012 Data Analysis School, Fermilab, Batavia, IL, January 11, 2012.
- “Highlights from CMS Physics”, Symposium on Collider Physics, Korea University, Seoul, Korea, October 14, 2011.
- “Stopped Particle Searches at CMS” Embarking on a New Era of Discovery: LHC, Dark Matter, and Their Interplay, BCTP, Berkeley, CA, April 29, 2011.
- “Results from Searches for BSM Exotica at CMS”, New Data from the Energy Frontier, ACP, Aspen, CO, February 17, 2011.