

Curriculum Vitae

Michael J Mulhearn
University of California, Davis

Education and Training

- University of Virginia (2009-2011)
Post-doctoral Research Scientist
Fermilab Visiting Scientist, L2 Project Manager, High-mass Higgs Convener.
- Columbia University (2004-2009)
Post-doctoral Research Fellow
Level 1 Calorimeter Trigger Upgrade, $ZH \rightarrow \ell\ell b\bar{b}$ Analysis Leader.
- Massachusetts Institute of Technology (1998-2004)
Ph.D. Physics 2004
Advisor: Prof. Christoph Paus
Thesis: A Direct Search for Dirac Magnetic Monopoles
- University of Pittsburgh (1994-1998)
B.S. Physics and Mathematics 1998
Chancellor's Undergraduate Scholar, Phi Beta Kappa, Abraham Pais Award for Scientific Writing, Physics Department Undergraduate Research Award.

Research and Professional Experience

- University of California, Davis (2011-)
Assistant Professor, Department of Physics
CMS collaboration, Level-1 Trigger Upgrade, Exotic Physics Searches.

Awards

- 2013 Hellman Fellow
- 2010 Robert Hofstadter Diploma and New Talent Award, Ettore Majorana Foundation

Synergistic Activities

- Presented a public lecture “The Higgs boson: a tale of two cities”, Davis Picnic Day 2012.
- Presented “Low mass Higgs searches at the Tevatron” at CIPANP 2012.
- Reviewer for proposals to US DOE CDRD and SBIR-STTR programs (2011-2012).
- Presented “The D0 Higgs combination” at ICHEP 2010 in Paris.

Selected Publications

1. V.M. Abazov *et al.* [D0 Collaboration], “Combined search for the standard model Higgs boson decaying to bb using the D0 Run II data” *Phys. Rev. Lett.* **109**, 121802 (2012) [arXiv:1207.6631].
2. T. Aaltonen *et al.* [CDF and D0 Collaborations], “Evidence for a particle produced in association with weak bosons and decaying to a bottom-antibottom quark pair in Higgs boson searches at the Tevatron” *Phys. Rev. Lett.* **109**, 071804 (2012) [arXiv:1207.6436].
3. V.M. Abazov *et al.* [D0 Collaboration], “Search for Associated Higgs Boson Production using Like Charge Dilepton Events in pp Collisions at $\sqrt{s} = 1.96$ TeV” *Phys. Rev. D* **84**, 092002 (2011) [arXiv:1107.1268].
4. V.M. Abazov *et al.* [D0 Collaboration], “Search for the Standard Model Higgs Boson in the $H \rightarrow WW \rightarrow \ell\nu q\bar{q}$ Decay Channel”, *Phys. Rev. Lett.* **106**, 171802 (2011) [arXiv:1101.6079].
5. V.M. Abazov *et al.* [D0 Collaboration], “Search for WH Associated Production in 5.3 fb^{-1} of $p\bar{p}$ Collisions at the Fermilab Tevatron”, *Phys. Lett. B* **698**, 6 (2011) [arXiv:1012.0874].
6. V.M. Abazov *et al.* [D0 Collaboration], “Search for $ZH \rightarrow \ell^+ \ell b\bar{b}$ production in 4.2 fb^{-1} of $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV”, *Phys. Rev. Lett.* **105**, 251801 (2010) [arXiv:1008.3564].
7. T. Aaltonen *et al.* [CDF and D0 Collaborations], “Combined Tevatron Upper Limit on $gg \rightarrow H \rightarrow W^+W^-$ and Constraints on the Higgs Boson Mass in Fourth-Generation Fermion Models”, *Phys. Rev. D* **82**, 011102 (2010) [arXiv:1005.3216].
8. V.M. Abazov *et al.* [D0 Collaboration], “Search for the Standard Model Higgs Boson in the $ZH \rightarrow \nu\nu b\bar{b}$ Channel in 5.2 fb^{-1} of $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV” *Phys. Rev. Lett.* **104**, 071801 (2010) [arXiv:0912.5285].
9. V.M. Abazov *et al.* [D0 Collaboration], “Search for Higgs Boson Production in Dilepton and Missing Energy Final States with 5.4 fb^{-1} of $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV”, *Phys. Rev. Lett.* **104**, 061804 (2010) [arXiv:1001.4481].
10. T. Aaltonen *et al.* [CDF and D0 Collaborations], “Combination of Tevatron searches for the standard model Higgs boson in the W^+W^- decay mode”, *Phys. Rev. Lett.* **104**, 061802 (2010) [arXiv:1001.4162].
11. M. Abolins *et al.*, “Design and implementation of the new D0 Level-1 calorimeter trigger”, *Nucl. Instrum. Meth. A* **584**, 75 (2008) [arXiv:0709.3750].
12. A. Abulencia *et al.* [CDF Collaboration], “Direct search for Dirac magnetic monopoles in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV”, *Phys. Rev. Lett.* **96**, 201801 (2006) [hep-ex/0509015].
13. G. Bauer, M.J. Mulhearn, C. Paus, P. Schieferdecker and S. Tether, “Simulating magnetic monopoles by extending GEANT”, *Nucl. Instrum. Meth. A* **545**, 503 (2005).