

Prof. Dr. Thomas Müller - Curriculum Vitae

Born January 16th, 1953, in Wuppertal, Germany
Married, four children

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Scientific Career

Study of Physics Diploma in Physics, Bonn University 1979
 Ph.D. in Physics, Bonn University
 Thesis: "Particle Production in Proton-Antiproton-Reactions at 540 GeV
 Center of Mass Energy" 1983

Habilitation Venia Legendi, Bonn University
 Book: "Production Properties of the Intermediate Vector Bosons W and Z at the
 CERN Proton-Antiproton Collider" 1988

Employment CERN Fellow (UA1-Experiment) 1984-1985
 CERN Research Staff (UA1-Experiment) 1986-1989
 Assistant Professor, University of California, Los Angeles (UCLA) 1990-1995
 SSC Fellow (SDC Experiment) 1991-1993
 Full Professor, UCLA 1995-1996
 C4 Professor and Chair, Karlsruhe Institute of Technology (KIT) since 1995

Membership in Boards

University Member of the Legislative Assembly UCLA 1992-1994
 Head of Institut für Experimentelle Kern-/Teilchenphysik 1995-2019
 Dean Physics Faculty 2004-2006 and since 2019
 Co-founder and member of GridKa Overviewboard 2001-2018
 Co-founder and spokesman of the Karlsruhe Center of Excellence CETA . 2004-2007
 Member of the Senate of KIT 2004-2006 and since 2015

Research Member of LEP Committee 2000-2001
 Member of the European Committee of Future Accelerators ECFA 2005-2016
 German representative in Restricted ECFA 2010-2016
 Co-editor of Springer "Tracts in Modern Physics" 1996-2017
 Member of the CERN Research Review Board 1998-2018
 Member, later Chair of the Scientific Review Board of the
 German Ministry of Science BMBF (Gutachterausschuss) 1999-2008
 Member, later Chair of EUDET Advisory Board 2005-2011
 Member of Advisory Board of the Austrian Academy of Science, HEPHY .. 2008-2015
 Member of IUPAP C11 2009-2015
 Member of the Executive Board of the European Physical Society 2011-2016

Memberships in Societies

- Deutsche Physikalische Gesellschaft, American Physical Society, European Physical Society
- Deutscher Hochschulverband
- Karlsruher Universitätsgesellschaft
- Verein der Freunde und Förderer der Universität Bonn

Research Profile

Physics at hadron colliders: properties of the top quark, search for the Higgs boson, Yukawa-couplings of the Higgs boson, search for anomalies in the EWK interaction, search for physics beyond the Standard Model. Development and construction of detectors, focus on calorimeters and tracking detectors.

Participation in the following experiments:

R708 (CERN ISR), UA5 und UA1 (CERN p-pbar Collider), ICARUS (Grand Sasso), CDF (FNAL Tevatron), SDC (SSC), APEX (FNAL Antiproton Source), Belle 2 (KEK), CMS (CERN LHC)

Most important 13 Publications with dominant contributions

[1] Production of photons and search for Centauro events at the SPS Collider, UA5 Collaboration, Phys.Lett.B115:71, 1982.

[2] Production Properties of the Intermediate Vector Bosons W and Z at the CERN p anti-p Collider, Th. Muller, Fortschr. Phys.37:339, 1989.

[3] Search for antiproton decay at the Fermilab Antiproton Accumulator, T861-APEX Collaboration, Phys.Rev.Lett.72:1596-1599,1994.

[4] Measurement of $W - \gamma$ couplings with CDF in ppbar collisions at $\sqrt{s} = 1.8$ TeV, CDF Collaboration, Phys.Rev.Lett.74:1936-1940, 1995.

[5] The CMS tracker and its performance, CMS Collaboration, Nucl. Instrum. Meth. A408: 119-127, 1998.

[6] Hadron Collider Physics – Proc. 14th Topical Conference, HCP 2002, by M. Erdmann (ed.) & Th. Muller (ed.). Berlin, Germany: Springer (2003) 527.

[7] Development and studies of a time projection chamber with GEMs, J. Kaminski, *et al.*, Nucl.Instrum.Meth.A535:201-205, 2004.

[8] Summary of the CMS Potential for the Higgs Boson Discovery, S. Abdullin, *et al.*, Eur.Phys.J.C39S2:41-61,2005.

[9] First Observation of Electroweak Single Top Quark Production, CDF Collaboration, Phys. Rev.Lett. 103:092002, 2009.

[10] Physics in Collision 2010 – Proc. 30th International Symposium, PIC 2010, by Jyothsna Komaragiri, Thomas Müller, Jeannine Wagner-Kuhr (ed.). Karlsruhe, Germany.

[10] Measurement of the Top-Antitop Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV using the Kinematic Properties of Events with Leptons and Jets, CMS Collaboration, Eur. Phys. J. C71 (2011) 1721.

[11] Measurement of the charge asymmetry in top-quark pair production in proton-proton collisions at $\sqrt{s}=7$ TeV, CMS Collaboration, arXiv:1115.5100, Phys. Lett. B 709 (2012)

[12] Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC, CMS Collaboration, Phys. Lett. B 716 (2012) 30-61

[13] Search for the associated production of a Higgs boson with a single top quark in proton-proton collisions at $\sqrt{s}=8$ TeV, CMS Collaboration, JHEP 06 (2016)

[14] Cross section measurement of t-channel single top quark production in pp collisions at $\sqrt{s}=13$ TeV, CMS Collaboration, Phys. Lett. B 772 (2017)

Awards, Positions of Leadership

- CERN Fellowship 1984-1985
- SSC Fellowship (SDC Experiment) 1991-1993
- Co-Spokesperson US-CMS 1994-1996
- Spokesperson German CMS Groups 1999-2004 and 2015-2018 (FSP104)

Awards of the European Physical Society:

- 2013 High Energy and Particle Physics Prize for the discovery of the Higgs boson (ATLAS, CMS)
- 2019 High Energy and Particle Physics Prize for the discovery of the top quark (CDF, D0)