Prof. Dr. Thomas Müller - Curriculum Vitae

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

Affiliation: Institut für Experimentelle Teilchenphysik, KIT, Karlsruhe
Tel.: (+49) 721 608-43524
(+41) 22 76-71533

E-Mail: thomas.mueller@kit.edu, thomas.muller@cern.ch

Web: https://www.etp.kit.edu/index.php

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)	1996-2021
	KIT Distinguished Senior Fellow	since 2021

Membership in Boards

University	Member of the Legislative Assembly UCLA	1992-1994
	Head of Institut für Experimentelle Kern-/Teilchenphysik	1995-2019
	Dean KIT Physics Faculty	2004-2006 and 2019-2021
	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 2015-2021
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 Federal Ministry of Education and Research 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, Youkawa-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

- Production of photons and search for Centauro events at the SPS Collider, UA5 Collaboration, Phys.Lett.B115:71, 1982.
- Production Properties of the Intermediate Vector Bosons W and Z at the CERN p anti-p Collider, Th. Muller, Fortschr. Phys.37:339, 1989.
- Search for antiproton decay at the Fermilab Antiproton Accumulator, T861-APEX Collaboration, Phys.Rev.Lett.72:1596-1599,1994.
- 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.
- The CMS tracker and its performance, CMS Collaboration, Nucl. Instrum. Meth. A408: 119-127, 1998.
- Hadron Collider Physics – Proc. 14th Topical Conference, HCP 2002, by M. Erdmann (ed.) & Th. Muller (ed.). Berlin, Germany: Springer (2003) 527.
- Development and studies of a time projection chamber with GEMs, J. Kaminski, *et al.*, Nucl.Instrum.Meth.A535:201-205, 2004.
- Summary of the CMS Potential for the Higgs Boson Discovery, S. Abdullin, et al., Eur.Phys.J.C39S2:41-61,2005.
- First Observation of Electroweak Single Top Quark Production, CDF Collaboration, Phys. Rev.Lett. 103:092002, 2009.
- Physics in Collision 2010 – Proc. 30th International Symposium, PIC 2010, by Jyothsna Komaragiri, Thomas Müller, Jeannine Wagner-Kuhr (ed.). Karlsruhe, Germany.
- 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).
- 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).
- 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
- Search for the associated production of a Higgs boson with a single top quark in proton-proton collisions at /s=8 TeV, CMS Collaboration, JHEP 06 (2016).
- Cross section measurement of t-channel single top quark production in pp collisions at /s=13 TeV, CMS Collaboration, Phys. Lett. B 772 (2017).
- A multi-dimensional search for new heavy resonances decaying to boosted WW, WZ, or ZZ boson pairs in the dijet final state at 13 TeV, Eur. Phys. J. C80:237 (2020).

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)
- 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)