

## CURRICULUM VITAE: TILMAN PLEHN

### Personal Information

Address        Institut für Theoretische Physik  
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Date of birth    May 28, 1969 in Siegen, Germany

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### Education and Positions

since 12/08    Professor at the University of Heidelberg

10/07–11/08    Reader at the University of Edinburgh

01/06–09/07    Heisenberg Fellow & Lecturer at the University of Edinburgh

11/04–12/05    Heisenberg Fellow at the Max Planck Institute for Physics, Munich

11/02–10/04    Fellow at the CERN Theory Group

10/98–9/02     Research Associate/Assistant Scientist at the University of Wisconsin, Madison  
8/02             Department of Physics Chair's Award  
                  for *Excellence in Undergraduate Physics Teaching*

1/02–5/02      and

6/01–8/01      and

6/00–8/00      Visiting Assistant Professor/Lecturer at the University of Wisconsin, Madison

7/98–9/98      Fellow at the DESY Theory Group

6/95–7/98      Ph D student at the DESY Theory Group  
                  *Production of Supersymmetric Particles at High Energy Colliders*  
                  supervisor: Peter Zerwas

4/92–5/95      Student at the University of Hamburg (Diplom)

10/93–5/95     Diploma thesis at the DESY Theory Group  
                  *Pair Production of Higgs Bosons in Hadron Collisions*  
                  supervisor: Peter Zerwas

10/91–4/95     Scholarship of the Studienstiftung des Deutschen Volkes

4/91–2/92      Student at the ETH Zürich

10/89–2/91     Student at the University of Heidelberg (Vordiplom)

7/88–9/89      Military service

6/88             Abitur: Werner-Heisenberg-Gymnasium, Neuwied

## Undergraduate Teaching

- 10/11–7/12 Heidelberg  
*Quantum Field Theory I+II*
- 10/09–7/10 Heidelberg  
*Mechanics and Thermodynamics (Theoretical Physics I+II)*
- 10/10–2/11 and  
4/09–7/09 Heidelberg  
*LHC Physics*
- 1/07–3/07 and  
9/06–12/06 and  
1/06–3/06 Edinburgh  
*Foundations of Mathematical Physics*
- 1/02–5/02 Madison (spring term)  
*Physics in the Arts (Physics 109)*
- 6/01–8/01 and  
6/00–8/00 Madison (summer terms, including lab sessions)  
*Physics in the Arts (Physics 109)*

## Graduate Teaching

7/10	Cargese <i>Supersymmetry at the LHC</i>
2/10	LHCb Flavor Meeting, Neckarzimmern <i>All that Sfitting</i>
9/08	Studienstiftung des deutschen Volkes, Germany <i>LHC Physics</i> (with D Zeppenfeld)
6/08	TASI, Boulder, USA <i>Theory Tools for the LHC Era</i> (four lectures)
11/07	Edinburgh <i>Hunting the Higgs</i> (eight lectures)
11/07	Freiburg Graduiertenkolleg <i>Physics at the LHC</i> (three lectures)
10/07	Karlsruhe Graduiertenkolleg <i>BSM Physics at the LHC</i> (three lectures)
9/07	Rutherford Laboratory Summer School, Oxford <i>Phenomenology</i> (eight lectures)
2/07	Dutch–Brazilian Summer School, Campos do Jordao <i>LHC Phenomenology</i> (five lectures)
2/07	Edinburgh <i>BSM Physics: Little–Higgs Models</i> (eight lectures)
11/06	Edinburgh <i>BSM Physics: Extra Dimensions</i> (eight lectures)
5/06	Catholic University of Louvain (guest professor) <i>Introduction to Supersymmetry</i> (five lectures)
1/06–3/06	Edinburgh <i>BSM Physics: Supersymmetry</i> (six lectures)
02/06	and
10/05	International Max Planck Research School, Munich <i>Higgs at the LHC</i> <i>Supersymmetry at the LHC</i> <i>Introduction to Supersymmetry</i>
8/03–9/03	European School of High–Energy Physics, Tsakhadzor (tutor)
7/03	Bonn international graduate school <i>Higgs and New Physics at the LHC</i> (five lectures)

## Professional Activities

12/11 Organizer: LHC New Physics Forum, Heidelberg  
7/11 Convener: European Physical Society Meeting 2011, Grenoble  
10/10 International Advisory Committee: Charged 2010, Uppsala  
5/10 Co-organizer: Johns Hopkins workshop series  
1/10 International Organization Committee: Beyond Three Generations, Taipei  
8/09 Organizer: BSM-LHC workshop, GGI Florence  
2/09 Organizer: LHC New Physics Forum, Heidelberg  
9/08 International Advisory Committee: Charged 2008, Uppsala  
7/08 Organizer: BSM-LHC workshop, Aspen  
11/07 Organizer: 4th Ultra-Mini Workshop on Dark Matter at Colliders, Edinburgh  
6/07 Program Committee: SUSY 2007, Karlsruhe  
6/07 Convener: Workshop on Physics at TeV Colliders, Les Houches  
5/07 Organizer: 3rd Ultra-Mini Workshop on Matrix-Element Methods, Madison  
3/07 Organizer: 2nd Ultra-Mini Workshop on High-Dimensional Spaces, Edinburgh  
11/06 Organizer: 1st Ultra-Mini Workshop on LHC Physics, Edinburgh  
9/06 International Advisory Committee: Charged 2006, Uppsala  
8/06 Co-organizer: BUSSTEPP summer school, Edinburgh  
since 2005 participant/member of the French GDR SUSY  
11/04–12/05 Organizer: Phenomenology Journal Club, MPI for Physics, Munich  
4/01 and  
4/00 Organizer: Parallel Sessions PHENO2000/2001  
Referee PRL, PRD, PLB, JHEP, CPC, EPJ,  
Leverhulme Trust, PPARC/STFC, Particle Data Group, NSF

Editorial board Journal of Physics G

## Research Advising and Junior Collaborators

Fabian Gross	Heidelberg
Thomas Lübbert	Heidelberg
Sebastian Bock	Heidelberg
Dorival Netto	Heidelberg
Ioan Wigmore	Edinburgh
Erik Gerwick	Edinburgh
Ben O’Leary	Edinburgh (co-supervisor M Krämer)
Michael Spannowsky	Munich (supervisor H Fritzsche)
Michael Rauch	Munich (supervisor W Hollik/M Drees)
Alexandre Alves	Sao Paulo (supervisor O Eboli)
Dan Hooper	Madison (supervisor F Halzen)
Tianjun Li	Madison (supervisor V Barger)
Jing Jiang	Madison (supervisor T Han)

## PUBLICATIONS IN JOURNALS

- 1 *Travels on the squark-gluino mass plane*  
with J Jäckel, V V Khoze, and P Richardson  
arXiv:1109.2072 [hep-ph], submitted to Phys Rev D
- 2 *Establishing Jet Scaling Patterns with a Photon*  
with C Englert, P Schichtel, and S Schumann  
arXiv:1108.5473 [hep-ph], submitted to JHEP
- 3 *Understanding Jet Scaling and Jet Vetos in Higgs Searches*  
with E Gerwick and S Schumann  
arXiv:1108.3335 [hep-ph], submitted to Phys Rev Lett
- 4 *Automized Squark-Neutralino Production to Next-to-Leading Order*  
with T Binoth, D Goncalves Netto, D Lopez-Val, K Mawatari, and I Wigmore  
Phys Rev D84 (2011) 075005
- 5 *Exploring the Higgs portal*  
with C Englert, D Zerwas, and P Zerwas  
Phys Lett B703 (2011) 298
- 6 *W+Jets at CDF: Evidence for Top Quarks*  
with M Takeuchi  
J Phys G G38 (2011) 095006
- 7 *Jets plus Missing Energy with an Autofocus*  
with C Englert, P Schichtel, and S Schumann  
Phys Rev D83 (2011) 095009
- 8 *Boosted Semileptonic Tops in Stop Decays*  
with M Spannowsky and M Takeuchi  
JHEP 1105 (2011) 135
- 9 *Asymptotic safety and Kaluza-Klein gravitons at the LHC*  
with E Gerwick and D Litim  
Phys Rev D83 (2011) 084048
- 10 *Measuring Supersymmetry with Heavy Scalars*  
with E Turlay, R Lafaye, M Rauch, and D Zerwas  
J Phys G G38 (2011) 035003
- 11 *Measuring Hidden Higgs and Strongly-Interacting Higgs Scenarios*  
with S Bock, R Lafaye, M Rauch, D Zerwas, and P Zerwas  
Phys Lett B694 (2010) 44
- 12 *Measuring Unification*  
with C Adam, J Kneur, R Lafaye, M Rauch, and D Zerwas  
Eur Phys J C71 (2011) 1520
- 13 *Stop Reconstruction with Tagged Tops*  
with M Spannowsky, M Takeuchi and D Zerwas  
JHEP 1010 (2010) 078
- 14 *Charged Higgs Boson Production in Association with a Top Quark in MC@NLO*  
with C Weydert et al.  
Eur Phys J C67 (2010) 617

- 15 *New Physics at the LHC*  
with D Morrissey and T Tait  
arXiv:0912.3259 [hep-ph], Phys Rept in print
- 16 *Fat Jets for a Light Higgs*  
with G Salam and M Spannowsky  
Phys Rev Lett 104 (2010) 111801
- 17 *Understanding Single Tops using Jets*  
with M Rauch and M Spannowsky  
Phys Rev D80 (2009) 114027
- 18 *Measuring the Higgs Sector*  
with R Lafaye, M Rauch, D Zerwas, and M Dührssen  
JHEP (2009) 0908:009
- 19 *Seeking Sgluons*  
with T Tait  
J Phys G36 (2009) 075001
- 20 *Supersymmetric Higgs Bosons in Weak Boson Fusion*  
with W Hollik, M Rauch and H Rzehak  
Phys Rev Lett 102 (2009) 091802
- 21 *Neutralino Dark Matter and Trilepton Searches in the MSSM*  
with D Hooper and A Vallinotto  
Phys Rev D77 (2008) 095014
- 22 *Measuring Supersymmetry*  
with R Lafaye, M Rauch, D Zerwas  
Eur Phys J C54 (2008) 617
- 23 *Signatures of Gravitational Fixed Points at the LHC*  
with D Litim  
Phys Rev Lett 100 (2008) 131301
- 24 *Charged-Higgs Collider Signals with or without Flavor*  
with S Dittmaier, G Hiller and M Spannowsky  
Phys Rev D77 (2008) 115001
- 25 *Four Generations and Higgs Physics*  
with G Kribs, M Spannowsky and T Tait  
Phys Rev D76 (2007) 075016
- 26 *MadGraph/MadEvent v4: The new web generation*  
with J Alwall et al.  
JHEP 09 (2007) 028
- 27 *Same-Sign Charginos and Majorana Neutralinos at the LHC*  
with J Alwall and D Rainwater  
Phys Rev D76 (2007) 055006
- 28 *It's a Gluino!*  
with A Alves and O Eboli  
Phys Rev D74 (2006) 095010
- 29 *Supersymmetry Simulations with Off-Shell Effects for LHC and ILC*

- with K Hagiwara, W Kilian, F Krauss, T Ohl, D Rainwater, J Reuter, S Schumann  
Phys Rev D73 (2006) 054002
- 30 *Weak Boson Fusion Production of Supersymmetric Particles at LHC*  
with G C Cho, K Hagiwara, J Kanzaki, D Rainwater und T Stelzer  
Phys Rev D73 (2006) 055005
- 31 *Supersymmetry Parameter Analysis: SPA Convention and Project*  
with J A Aguilar-Saavreda et al.  
Eur Phys J C46 (2006) 43
- 32 *Squark and Gluino Production with Jets*  
with D Rainwater and P Skands  
Phys Lett B645 (2007) 217
- 33 *The Quartic Higgs Coupling at Hadron Colliders*  
with M Rauch  
Phys Rev D72 (2005) 053008
- 34 *Dark Matter and Collider Phenomenology with Two Light Supersymmetric Higgs Bosons*  
with D Hooper  
Phys Rev D72 (2005) 115005
- 35 *Charged Higgs Boson Pairs at the LHC*  
with A Alves  
Phys Rev D71 (2005) 115014
- 36 *Physics Interplay of the LHC and the ILC*  
with G Weiglein et al.  
Phys Rept 426 (2006) 47
- 37 *Pair Production of Scalar Leptoquarks at the LHC*  
with M Krämer, M Spira and P Zerwas  
Phys Rev D71 (2005) 057503
- 38 *Graviton Collider Effects in One and More Large Extra Dimensions*  
with G Giudice and A Strumia  
Nucl Phys B706 (2005) 455
- 39 *Split Supersymmetry at Colliders*  
with W Kilian, P Richardson and E Schmidt  
Eur Phys J C39 (2005) 229
- 40 *Associated Production of a Top Quark and a Charged Higgs Boson*  
with E Berger, T Han and J Jiang  
Phys Rev D71 (2005) 115012
- 41 *Probing the Higgs Self-Coupling at Hadron Colliders Using Rare Decays*  
with U Baur and D Rainwater  
Phys Rev D69 (2004) 053004
- 42 *Robust LHC Higgs Search in Weak Boson Fusion*  
with A Alves, O Eboli and D Rainwater  
Phys Rev D69 (2004) 075005
- 43 *Higgs-Boson Production Induced by Bottom Quark*

- with E Boos  
Phys Rev D69 (2004) 094005
- 44 *Examining the Higgs Boson Potential at Lepton and Hadron colliders: A Comparative Analysis*  
with U Baur and D Rainwater  
Phys Rev D68 (2003) 033001
- 45 *Supersymmetric Dark Matter – How Light can the LSP Be?*  
with D Hooper  
Phys Lett B562 (2003) 18
- 46 *Stop Lepton Associated Production at Hadron Colliders*  
with A Alves and O Eboli  
Phys Lett B558 (2003) 165
- 47 *Determining the Higgs Boson Self Coupling at Hadron Colliders*  
with U Baur and D Rainwater  
Phys Rev D67 (2003) 033003
- 48 *Charged Higgs Boson Production in Bottom-Gluon Fusion*  
Phys Rev D67 (2003) 014018
- 49 *Measuring the Higgs Boson Self Coupling at the LHC and Finite Top Mass Matrix Elements*  
with U Baur and D Rainwater  
Phys Rev Lett 89 (2002) 151801
- 50 *Higgs Decays to Muons in Weak Boson Fusion*  
with D Rainwater  
Phys Lett B520 (2001) 108
- 51 *Determining the Structure of Higgs Couplings at the LHC*  
with D Rainwater and D Zeppenfeld  
Phys Rev Lett 88 (2002) 051801
- 52 *CP-Violating Phases in SUSY, Electric Dipole Moments, and Linear Colliders*  
with V Barger, T Falk, T Han, J Jiang, and T Li  
Phys Rev D64 (2001) 056007
- 53  *$H \rightarrow WW$  as the Discovery Mode for a Light Higgs Boson*  
with N Kauer, D Rainwater and D Zeppenfeld  
Phys Lett B503 (2001) 113
- 54 *Probing Light Stoppoms with B Decays*  
with U Nierste  
Phys Lett B493 (2000) 104
- 55 *Single Stop Production at Hadron Colliders*  
Phys Lett B488 (2000) 359
- 56 *A Method for Identifying  $H \rightarrow \tau\tau \rightarrow e\mu p_T$  at the CERN LHC*  
with D Rainwater and D Zeppenfeld  
Phys Rev D61 (2000) 093005
- 57 *Physics Potential of a Tevatron Tripler*  
with V Barger, K Cheung, T Han, C Kao, and R Zhang

- Phys Lett B478 (2000) 224
- 58 *Measuring CP Violating Phases at a Future Linear Collider*  
with V Barger, T Han and T Li  
Phys Lett B475 (2000) 342
- 59 *The Production of Charginos/Neutralinos and Sleptons at Hadron Colliders*  
with W Beenakker, M Klasen, M Krämer, M Spira, and P Zerwas  
Phys Rev Lett 83 (1999) 3780
- 60 *Probing the MSSM Higgs Sector via Gauge Boson Fusion at the LHC*  
with D Rainwater and D Zeppenfeld  
Phys Lett B454 (1999) 297
- 61 *Stop Production at Hadron Colliders*  
with W Beenakker, M Krämer, M Spira, and P Zerwas  
Nucl Phys B515 (1998) 3
- 62 *Production of Charged Higgs Boson Pairs in Gluon–Gluon Collisions*  
with A Krause, M Spira and P Zerwas  
Nucl Phys B519 (1998) 85
- 63 *Physics with  $e^+e^-$  Linear Colliders*  
with E Accomando et al.  
Phys Rep 299 (1998) 1
- 64 *Pair Production of Scalar Leptoquarks at the Tevatron*  
with M Krämer, M Spira and P Zerwas  
Phys Rev Lett 79 (1997) 341
- 65 *Formation and Decay of Scalar Leptoquarks/Squarks in  $e p$  Collisions*  
with H Spiesberger, M Spira and P Zerwas  
Z Phys C74 (1997) 614
- 66 *Stop Decays in SUSY QCD*  
with W Beenakker, R Höpker and P Zerwas  
Z Phys C75 (1997) 349
- 67 *Pair Production of Neutral Higgs Particles in Gluon–Gluon Collisions*  
with M Spira and P Zerwas  
Nucl Phys B479 (1996) 46