

Composition of the CHIPP EB: *Elections and re-elections*

June 2014/MT

Introduction

The CHIPP Executive Board is composed of up to four individuals: the Chair and one to three Vice-Chairs (Statutes Article 28.2). Their term of office is two years and renewable (Statutes Article 28.3). The Members of the CHIPP EB are elected by the Board (Article 27, litt. e of the Statutes).

The present composition of the CHIPP EB is the following:

- Olivier Schneider (chair), second term until end 2015
- Gilberto Colangelo (vice-chair), second term until end 2015
- Teresa Montaruli (vice-chair), first term until end 2014
- Rainer Wallny (vice-chair), first term until end 2015

Proposals

Teresa Montaruli has agreed to stand for re-election.

Gilberto Colangelo is stepping down at the end of 2014. To fill this open position as EB vice-chair, the call for nominations resulted in only one name being nominated more than once by the Board Members. This candidate, Adrian Signer, is available for election. His CV is attached.

The Board (applying Article 27, litt. e of the Statutes) is requested:

- **to re-elect** Teresa Montaruli for a second term from 1 January 2015 to 31 December 2016
- **to elect** Adrian Signer for a first term from 1 January 2015 to 31 December 2016.

Required majority: simple

Curriculum Vitae: Adrian Signer (PSI/UZH)

Personal Data

Date and Place of Birth : July 1, 1966, Zürich
Nationality : Swiss
Marital status : Married, 2 children
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CH-5213 Villnachern
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Employment

since Feb 13 : Extraordinary Professor (at 20% level)
at Physik-Institut, University of Zürich;
since Mar 12 : Senior Scientist at PSI Villigen, Switzerland;
Oct 08 – Feb 12 : Senior Lecturer at the Department of Physics, IPPP,
Durham University;
Jan 99 – Sep 08 : Lecturer at the Department of Physics, IPPP,
Durham University;
Sep 97 – Dec 98 : Research Associate Fellowship at CERN;
Oct 95 – Jun 97 : Postdoc at Stanford Linear Accelerator Center;

Education and Training

May 91 – Sep 95 : PhD at the Institute of Theoretical Physics
ETH-Zürich under the supervision of Prof. Z. Kunszt;
Oct 86 – Apr 91 : Undergraduate studies at ETH-Zürich and master
degree in theoretical physics;

Administration and teaching

- Since Jul 13: Head of the Theory Group of the Laboratory for Particle Physics at PSI
- Since Feb 13: 20% teaching load in my capacity as extraordinary Professor of the Physik-Institut of the University of Zürich. Courses taught: FS 2013 QM II, HS 2013 QFT I
- 2014: Organization of the Zuoz Summer School 2014

Administration and teaching during my time in Durham

During my stay in Durham I have spent a large fraction of my time to activities that are not directly related to research.

- Jan 99 – Feb 12: Teaching at all levels (undergraduate Level 1 to Level 4) as well as postgraduate teaching. This involves giving lecture courses (e.g. Relativity and EM, Supersymmetry, QED, Classical Mechanics, Mathematical Methods for Physics), supervising project students and giving tutorials.
- 2008: “Excellence in Teaching Award” (a University wide award of £10'000.)
- Jan 99 – Feb 12: Member of the Board of Studies and Board of Examiners of the Department of Physics, served on numerous committees and was actively involved in curriculum development.
- Aug 10 – Feb 12: Chair of the Board of Examiners and member of the Management Board for the taught postgraduate course MSc in Particles, Strings and Cosmology.

General Scientific Activities

Main research interests

- Higher-order calculations in QFT, regularization scheme dependence, structure and treatment of infrared singularities
- Top quark physics at a linear collider and hadron colliders
- Non-relativistic QCD
- Applications of effective theories in general and for off-shell effects in particular
- Interplay between low-energy precision physics and high-energy frontier

Supervision of postgraduate students

Katherine Adamson started Oct 99 submitted Sep 02
Vector Boson Pair Production at Hadron Colliders

Darren Forde started Oct 01 submitted Sep 04
Infrared Finite Amplitudes

Mark Morley-Fletcher started Oct 02 submitted Nov 05
Covariant Infrared Finite Amplitudes

Gareth Brown started Oct 03 submitted Mar 07
Finite Scattering Amplitudes in Field Theory

Paul Mellor started Oct 07 submitted Oct 11
Off-Shell Effects for Single Top-Quark Production Processes at Hadron Colliders

Andrew Papanastasiou started Oct 08 submitted Sep 12
Off-Shell Effects for Top Quark Production at Hadron Colliders

Andrea Visconti started Nov 12

Other Scientific Activities

- Since Mar 12: Secretary of the Research Committee for Particle Physics at the Ring Cyclotron, PSI
- Jan 11 – Feb 12: Main coordinator of the EU Initial Training Network LHCphenonet for the U.K. team (Durham, Cambridge, Liverpool and Oxford).
- Oct 04 – 07: Member of the PPARC/STFC Particle Physics Grants Panel
- 2007: External expert for the 2007 High Performance Computing (HPC) grants round.
- I regularly organize and participate at numerous conferences, lecture often at (summer) schools and act as a referee for several journals.

Invitations/talks since March 2012

CERN Workshop: The case of a large-mass Higgs; 14-15 May 2012

Talk: *Approaching Higgs production from an effective-theory point of view*

Seminar Fundamentale Wechselwirkungen; Freiburg, Germany, 26 June 2012

Talk: *Resonant particle production at hadron colliders*

Kolloquium TU Dresden; Germany, 12 July 2012

Talk: *A theory tour on top quark physics*

CERN Workshop: Tools for precision and discovery physics with top quarks;
17-18 July 2012

Talk: *Status of single top cross sections*

Zuoz Summer School: Closing in on the Standard Model; 19-25 August 2012

2 Lectures: *Bound states*

DPG Physics School on Heavy Particles at the LHC;

Physikzentrum Bad Honnef, Germany, 16-21 September 2012

2 Lectures: *Top quark theory*

UK High Energy Physics Forum: Higgs and BSM;

Abingdon, Oxford, UK; 22-23 November 2012

Member of the Organising Committee

Open Users Meeting; PSI Villigen; 15 January 2013

Talk: *Effective tests of the Standard Model*

ESS Science Symposium; Grenoble, France; 25 March 2013

Talk: *Low-energy precision tests and the high-energy frontier*

CHIPP Annual Plenary Meeting; Sursee; 24 June 2013

Talk: *Testing the Standard Model and waiting for Godot*

Theory seminar KIT; Karlsruhe, Germany; 11 July 2013

Talk: *Effective theory approach to off-shell effects at hadron colliders*

Theory seminar Universität Wien, Austria; 29 April 2014

Talk: *Effective theory approach to top quark production at hadron colliders*

LPSC Colloquium, Grenoble, France; 22 May 2014

Talk: *Searching high and low for physics beyond the Standard Model*

Theory seminar ETH/UZH; Zurich; 27 May 2014

Talk: m_t

Theory seminar Universität Würzburg; Germany; 5 June 2014

Talk: *Effective theory approach to top quark production at hadron colliders*

forthcoming:

MIAPP: top quark physics mini-workshop, Munich, Germany ; 7-13 August 2014

Scheme dependence in the top quark mass determination

5th Linear collider physics school, Frauenchiemsee, Germany 11-15 August 2014

Lecture: *Top quark physics at a linear collider*

Articles in Refereed Journals

- [38] C. Gnendiger, A. Signer and D. Stöckinger
The Infrared Structure of QCD Amplitudes and $H \rightarrow gg$ in FDH and DRED
Phys. Lett. B **733** (2014) 296 [arXiv:1404.2171 [hep-ph]].
- [37] P. Falgari, A. Panastasiou and A. Signer,
Finite-width effects in unstable-particle production at hadron colliders
JHEP **1305** (2013) 156 [arXiv:1303.5299 [hep-ph]].
- [36] P. Falgari, F. Giannuzzi, P. Mellor and A. Signer,
Off-shell effects for t -channel and s -channel single-top production at NLO in QCD
Phys. Rev. D **83** (2011) 094013 [arXiv:1102.5267 [hep-ph]].
- [35] Y. Kiyo, A. Pineda and A. Signer,
New determination of inclusive electromagnetic decay ratios of heavy quarkonium from QCD,
Nucl. Phys. B **841** (2010) 231 [arXiv:1006.2685 [hep-ph]].
- [34] P. Falgari, P. Mellor and A. Signer,
Production-decay interferences at NLO in QCD for t -channel single-top production,
Phys. Rev. D **82** (2010) 054028 [arXiv:1007.0893 [hep-ph]].
- [33] A. Signer,
ABC of SUSY,
J. Phys. G **36** (2009) 073002 [arXiv:0905.4630 [hep-ph]].
- [32] A. Signer,
The charm quark mass from non-relativistic sum rules,
Phys. Lett. B **672** (2009) 333 [arXiv:0810.1152 [hep-ph]].
- [31] A. Signer and D. Stöckinger,
Using Dimensional Reduction for Hadronic Collisions,
Nucl. Phys. B **808** (2009) 88 [arXiv:0807.4424 [hep-ph]].
- [30] M. Beneke, P. Falgari, C. Schwinn, A. Signer and G. Zanderighi,
Four-fermion production near the W pair production threshold,
Nucl. Phys. B **792** (2008) 89 [arXiv:0707.0773 [hep-ph]].
- [29] A. Signer,
Combined fixed-order and effective-theory approach to $b\bar{b}$ sum rules,
Phys. Lett. B **654** (2007) 206 [arXiv:0707.3688 [hep-ph]].

- [28] A. Pineda and A. Signer,
Heavy quark pair production near threshold with potential non-relativistic QCD,
Nucl. Phys. B **762** (2007) 67 [arXiv:hep-ph/0607239].
- [27] A. Pineda and A. Signer,
Renormalization Group Improved Sum Rule Analysis for the Bottom Quark Mass,
Phys. Rev. D **73** (2006) 111501 [arXiv:hep-ph/0601185].
- [26] A. Signer and D. Stöckinger,
Factorization and regularization by dimensional reduction,
Phys. Lett. B **626** (2005) 127 [arXiv:hep-ph/0508203].
- [25] M. Beneke, N. Kauer, A. Signer and G. Zanderighi,
Towards pair production near threshold with unstable particle effective theory,
Nucl. Phys. Proc. Suppl. **152** (2006) 162 [arXiv:hep-ph/0411008].
- [24] M. Beneke, A. P. Chapovsky, A. Signer and G. Zanderighi,
Effective theory calculation of resonant high-energy scattering,
Nucl. Phys. B **686** (2004) 205 [arXiv:hep-ph/0401002].
- [23] M. Beneke, A. P. Chapovsky, A. Signer and G. Zanderighi,
Effective theory approach to unstable particle production,
Phys. Rev. Lett. **93** (2004) 011602 [arXiv:hep-ph/0312331].
- [22] D. A. Forde and A. Signer,
Infrared-finite amplitudes for massless gauge theories,
Nucl. Phys. B **684** (2004) 125 [arXiv:hep-ph/0311059].
- [21] K. L. Adamson, D. de Florian and A. Signer,
Gluon induced contributions to $Z\gamma$ production at hadron colliders,
Phys. Rev. D **67** (2003) 034016 [arXiv:hep-ph/0211295].
- [20] K. L. Adamson, D. de Florian and A. Signer,
Gluon induced contributions to $W Z$ and $W \gamma$ production at NNLO,
Phys. Rev. D **65** (2002) 094041 [arXiv:hep-ph/0202132].
- [19] A. P. Chapovsky, V. A. Khoze, A. Signer and W. J. Stirling,
Nonfactorizable corrections and effective field theories,
Nucl. Phys. B **621** (2002) 257 [arXiv:hep-ph/0108190].
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 $W \gamma$ and $Z \gamma$ production at hadron colliders,
Eur. Phys. J. C **16** (2000) 105 [arXiv:hep-ph/0002138].

- [17] A. H. Hoang *et al.*,
Top-antitop pair production close to threshold: Synopsis of recent NNLO results,
Eur. Phys. J. direct C **2** (2000) 1 [arXiv:hep-ph/0001286].
- [16] P. J. Dervan, A. Signer, W. J. Stirling and A. Werthenbach,
Anomalous triple and quartic gauge boson couplings,
J. Phys. G **26** (2000) 607 [arXiv:hep-ph/0002175].
- [15] L. J. Dixon, Z. Kunszt and A. Signer,
Vector boson pair production in hadronic collisions at order α_s : Lepton correlations and anomalous couplings,
Phys. Rev. D **60** (1999) 114037 [arXiv:hep-ph/9907305].
- [14] M. Beneke and A. Signer,
The bottom $\overline{\text{MS}}$ quark mass from sum rules at next-to-next-to-leading order,
Phys. Lett. B **471** (1999) 233 [arXiv:hep-ph/9906475].
- [13] M. Beneke, A. Signer and V. A. Smirnov,
Top quark production near threshold and the top quark mass,
Phys. Lett. B **454** (1999) 137 [arXiv:hep-ph/9903260].
- [12] D. de Florian, S. Frixione, A. Signer and W. Vogelsang,
Next-to-leading order jet cross sections in polarized hadronic collisions,
Nucl. Phys. B **539** (1999) 455 [arXiv:hep-ph/9808262].
- [11] L. J. Dixon, Z. Kunszt and A. Signer,
Helicity amplitudes for $O(\alpha_s)$ production of W^+W^- , $W^\pm Z$, ZZ , $W^\pm\gamma$, or $Z\gamma$ pairs at hadron colliders,
Nucl. Phys. B **531** (1998) 3 [arXiv:hep-ph/9803250].
- [10] M. Beneke, A. Signer and V. A. Smirnov,
Two-loop Correction to the Leptonic Decay of Quarkonium,
Phys. Rev. Lett. **80** (1998) 2535 [arXiv:hep-ph/9712302].
- [9] L. J. Dixon and A. Signer,
Complete $O(\alpha_s^3)$ results for $e^+e^- \rightarrow (\gamma, Z) \rightarrow$ four jets,
Phys. Rev. D **56** (1997) 4031 [arXiv:hep-ph/9706285].
- [8] A. Signer,
MENLO.PARC: A program for $e^+e^- \rightarrow 4$ jets at next-to-leading order,
Comput. Phys. Commun. **106** (1997) 125.

- [7] A. Signer and L. J. Dixon,
Electron positron annihilation into four jets at next-to-leading order in α_s ,
Phys. Rev. Lett. **78** (1997) 811 [arXiv:hep-ph/9609460].
- [6] S. Frixione, Z. Kunszt and A. Signer,
Three jet cross-sections to next-to-leading order,
Nucl. Phys. B **467** (1996) 399 [arXiv:hep-ph/9512328].
- [5] A. Signer,
One loop corrections to five parton amplitudes with external photons,
Phys. Lett. B **357** (1995) 204 [arXiv:hep-ph/9507442].
- [4] Z. Kunszt, A. Signer and Z. Trocsanyi,
Collinear limits of one-loop helicity amplitudes in QCD,
Heavy Ion Phys. **1** (1995) 43.
- [3] Z. Kunszt, A. Signer and Z. Trocsanyi,
One Loop Radiative Corrections To The Helicity Amplitudes Of QCD Processes Involving Four Quarks And One Gluon,
Phys. Lett. B **336** (1994) 529 [arXiv:hep-ph/9405386].
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Singular terms of helicity amplitudes at one loop in QCD and the soft limit of the cross-sections of multiparton processes,
Nucl. Phys. B **420** (1994) 550 [arXiv:hep-ph/9401294].
- [1] Z. Kunszt, A. Signer and Z. Trocsanyi,
One Loop Helicity Amplitudes For All $2 \rightarrow 2$ Processes In QCD And $N=1$ Supersymmetric Yang-Mills Theory,
Nucl. Phys. B **411** (1994) 397 [arXiv:hep-ph/9305239].