Curriculum Vitae

Thomas Becher

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Personal data

Citizenship: Swiss
Marital status: married
Date of birth: 10/25/1971
Place of Birth: Switzerland

Academic Positions

University of Bern, Full professor	August 2009 – present
Harvard University, Visiting scholar	January 2015 – July 2015
Fermi National Accelerator Laboratory, Associate Scientist, Scientist I (from June 2008)	October 2004 – July 2009
Stanford Linear Accelerator Center, Research Associate	October 2001 – September 2004
Cornell University, Ithaca, NY Post-Doc	March 2000 – September 2001

Education

University of Bern, Switzerland	October 1991 – January 2000
Degree: Ph.D. Physics *Thesis:* The Low Energy Structure of the Pion Nucleon Interaction *Advisor:* Prof. H. Leutwyler	January 2000
Degree: M.A. Physics *Thesis:* Two Topics in Exact Renormalization Group Theory *Advisor:* Prof. P. Hasenfratz	June 1996

Recent Conference Talks and Lectures

1. **"Modern Effective Field Theory"**, School on Selected Topics in Theoretical High Energy Physics, Tbilisi, Georgia, September 2015.
2. **"Analytical resummation and the link with Monte Carlo Event Generators"**, Ninth MCnet School, Spa, Belgium, September 2015.
3. **"Jets in SCET"**, Higher Orders and Jets for LHC, MITP, Mainz, July 2015.
4. **"Progress in SCET"**, Parton Showers, Event Generators and Resummation, Krakow, May 2015.
5. **"q_T spectra of W/Z and H near threshold at NNLO"**, SCET 2014, Munich, March 2014.
6. **"Precision predictions for Higgs production"**, International conference on Flavor Physics and Mass Generation, Singapore, Feb. 2014
7. **"Es ist schön, manchmal recht zu haben. Nobelpreis für Englert und Higgs",** Physik am Freitag, Bern, Jan. 2014.
8. **"Higgs production with a jet veto: resummation"**, ESI Program on Jets and Quantum Fields for LHC and Future Colliders, Vienna, July 2013
9. **"Higgs Production with a Jet Veto"**, KITP Program: Exploring TeV Scale New Physics with LHC Data, Santa Barbara, June 2013
10. **"Resummation for Higgs cross sections"**, The first three years of the LHC, Mainz, March 2013
11. **"QCD Predictions for Higgs Physics"**, Aspen 2013 – Higgs Quo Vadis, Aspen, CO, March 2013
12. **"Das Higgs Boson und seine Entdeckung"**. Kantonale Fachschaftstagung, Burgdorf, November 2012
13. **"Collider physics with Soft-Collinear Effective Theory"**, Xth Quark Confinement and the Hadron Structure, Munich, October 2012
14. **"Resummation for QCD and EW cross-sections at the LHC"**, Physics at LHC – 2012, Vancouver, June 2012
15. **"Soft-Collinear Effective Theory"**, QNP2012: Sixth International Conference devoted to Quarks and Nuclear Physics, Paris, April 2012.
16. **"NNLL Resummation for Higgs Production with a Jet Veto"** SCET Workshop 2012, Madrid, March 2012.
17. **"Soft-Gluon Resummation for Higgs Production: Methods and Results"**, Zürich Phenomenology Workshop, Zürich, January 2012.

Recent publications

The following is a list of my peer-reviewed publications of the past five years. A complete publication list is available from INSPIRE, `http://inspirehep.net/search?ln=en&p=find+a+becher%2C+t`.

1. **"An Effective Field Theory for Jet Processes"**
   T. Becher, M. Neubert, L. Rothen and D. Y. Shao.
   arXiv:1508.06645 [hep-ph], submitted to PRL.

2. **"Factorization and resummation for transverse thrust"**
   T. Becher and X. Garcia i Tormo.
   arXiv:1502.04136 [hep-ph]
   10.1007/JHEP06(2015)071
   JHEP **1506**, 071 (2015)

3. **"Automated NNLL + NLO resummation for jet-veto cross sections"**
   T. Becher, R. Frederix, M. Neubert and L. Rothen.
   arXiv:1412.8408 [hep-ph]
   10.1140/epjc/s10052-015-3368-y
   Eur. Phys. J. C **75**, no. 4, 154 (2015)

4. **"Introduction to Soft-Collinear Effective Theory"**
   T. Becher, A. Broggio and A. Ferroglia.
   arXiv:1410.1892 [hep-ph]
   Lecture Notes in Physics Volume 896 (2015)
   10.1007/978-3-319-14848-9

5. **"The transverse-momentum spectrum of Higgs bosons near threshold at NNLO"**
   T. Becher, G. Bell, C. Lorentzen and S. Marti.
   arXiv:1407.4111 [hep-ph]
   10.1007/JHEP11(2014)026
   JHEP **1411**, 026 (2014)

6. **"Enhanced nonperturbative effects through the collinear anomaly"**
   T. Becher and G. Bell.
   arXiv:1312.5327 [hep-ph]
   10.1103/PhysRevLett.112.182002
   Phys. Rev. Lett. **112**, no. 18, 182002 (2014)

7. **"Transverse-momentum spectra of electroweak bosons near threshold at NNLO"**
   T. Becher, G. Bell, C. Lorentzen and S. Marti.
   arXiv:1309.3245 [hep-ph]
   10.1007/JHEP02(2014)004
   JHEP **1402**, 004 (2014)

8. **"Factorization and N^3LL_p+NNLO predictions for the Higgs cross section with a jet veto"**
   T. Becher, M. Neubert and L. Rothen.
   arXiv:1307.0025 [hep-ph]
   10.1007/JHEP10(2013)125
   JHEP **1310**, 125 (2013)

9. **"Electroweak Sudakov effects in W, Z and γ production at large transverse momentum"**
   T. Becher and X. G. iTormo.
   arXiv:1305.4202 [hep-ph]
   10.1103/PhysRevD.88.013009
   Phys. Rev. D **88**, 013009 (2013)

10. **"Higgs-Boson Production at Small Transverse Momentum"**
    T. Becher, M. Neubert and D. Wilhelm.
    arXiv:1212.2621 [hep-ph]
    10.1007/JHEP05(2013)110
    JHEP **1305**, 110 (2013)

11. **"NNLL Resummation for Jet Broadening"**
    T. Becher and G. Bell.
    arXiv:1210.0580 [hep-ph]
    10.1007/JHEP11(2012)126
    JHEP **1211**, 126 (2012)

12. **"Precision Direct Photon and W-Boson Spectra at High p_T and Comparison to LHC Data"**
    T. Becher, C. Lorentzen and M. D. Schwartz.
    arXiv:1206.6115 [hep-ph]
    10.1103/PhysRevD.86.054026
    Phys. Rev. D **86**, 054026 (2012)

13. **"Factorization and NNLL Resummation for Higgs Production with a Jet Veto"**
    T. Becher and M. Neubert.
    arXiv:1205.3806 [hep-ph]
    10.1007/JHEP07(2012)108
    JHEP **1207**, 108 (2012)

14. **"NNLO soft function for electroweak boson production at large transverse momentum"**
    T. Becher, G. Bell and S. Marti.
    arXiv:1201.5572 [hep-ph]
    10.1007/JHEP04(2012)034
    JHEP **1204**, 034 (2012)

15. **"Analytic Regularization in Soft-Collinear Effective Theory"**
    T. Becher and G. Bell.
    arXiv:1112.3907 [hep-ph]
    10.1016/j.physletb.2012.05.016
    Phys. Lett. B **713**, 41 (2012)

16. **"Electroweak Gauge-Boson Production at Small q_T: Infrared Safety from the Collinear Anomaly"**
    T. Becher, M. Neubert and D. Wilhelm.
    arXiv:1109.6027 [hep-ph]
    10.1007/JHEP02(2012)124
    JHEP **1202**, 124 (2012)

17. **"Resummation for W and Z production at large p_T"**
T. Becher, C. Lorentzen and M. D. Schwartz.
arXiv:1106.4310 [hep-ph]
10.1103/PhysRevLett.108.012001
Phys. Rev. Lett. **108**, 012001 (2012)

18. **"Factorization and Resummation for Jet Broadening"**
T. Becher, G. Bell and M. Neubert
Phys. Lett. B **704**, 276 (2011) [arXiv:1104.4108 [hep-ph]].

19. **"The gluon jet function at two-loop order"**
T. Becher and G. Bell
Phys. Lett. B **695**, 252 (2011) [arXiv:1008.1936 [hep-ph]].

20. **"Updated Predictions for Higgs Production at the Tevatron and the LHC"**
V. Ahrens, T. Becher, M. Neubert and L. L. Yang
Phys. Lett. B **698**, 271 (2011) [arXiv:1008.3162 [hep-ph]].

21. **"Drell-Yan production at small q_T, transverse parton distributions and the collinear anomaly"**
T. Becher and M. Neubert
Eur. Phys. J. C **71**, 1665 (2011) [arXiv:1007.4005 [hep-ph]].

22. **"Direct photon production with effective field theory"**
T. Becher and M. D. Schwartz
JHEP **1002**, 040 (2010) [arXiv:0911.0681 [hep-ph]].

23. **"Flavor Physics in the Quark Sector"**
M. Antonelli *et al.*
Phys. Rept. **494**, 197 (2010) [arXiv:0907.5386 [hep-ph]].