References

Curriculum Vitae: Univ. Prof. Dr. André Hoang

Faculty of Physics
University of Vienna
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Personal

Date of Birth: January 17, 1968 in Zwiesel, Germany
Citizenship: German
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Research Directions

- Collider physics phenomenology in the context of top quark and jet production.
- Effective field theory description of processes in extreme kinematic limits
- Higher order perturbative corrections in the strong and weak interactions.
- Intrinsic structure and properties of jets at high precision.
- Precise determinations of quark masses and the QCD coupling.

University Education:

10/1988 - 11/1992: Physics and Mathematics at University of Karlsruhe

11/1992: Diploma “Mit Auszeichnung” at University of Karlsruhe

12/1992 - 11/1995: Doctorate studies at KIT (Karlsruhe) with Prof. Hans Kühn

12/1995: Doctorate “summa cum laude” at University of Karlsruhe,

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Scientific Career:

12/1995 - 09/1996: Postgraduate scholar at Graduiertenkolleg Elementarteilchenphysik
University Karlsruhe

10/1996 - 09/1998: Postdoc researcher at the high energy group
University of California, San Diego

10/1998 - 12/2000: Fellow at the CERN theory division, Geneva, Switzerland

01/2001 - 09/2011: Teniored staff position at the Max-Planck-Institute

for Physics, Munich, Germany

01/2003: Habilitation

since 09/2010: Full University Professor at University of Vienna

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Previous Projects (last 5 years):

- **"Infrared Parton Shower Dynamics and the Top Quark Mass"**: Single project FWF P32383-N27, 06/2019 - 05/2024, support for Postdoc Daniel Samitz and Doctoral student t.b.a. **361.2 k€**
- **Doctoral School "Particles and Interactions"**: FWF W1252-N27, 03/2018 - 02/2022, **241.2 k€**; support for Doctoral students Christopher Lepenik, Angelika Widl, Daniel Lechner
- **"Heavy masses from jets using effective field theory"**: Single project FWF P28535-N27, 06/2016 - 09/2020, support for Postdoc Aditya Pathak and Doctoral student Christopher Lepenik, **343.3 k€**
- **EU-COST Action** "Unravelling new physics at the LHC through precision": CA16201, 01/2018 - 12/2021, travel and conference funds, amount still open

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Most important Peer-Review, Organizational Activities, Memberships:

- Peer-review acitivities: for journals JHEP, PRL, PRD, PLB as well as for DFG, SNF
- Deputy Director, Erwin-Schrödinger International Institute for Mathematics and Physics, Vienna (2017-2021)
- Vice Speaker, FWF-Doctoral Program "Particle and Interactions", Vienna (2014-2023)
- Membership for Austrian, German, American Physical Society
- Chair of the IAB for the conference series "International Symposium on Radiative Corrections"

Publication Summary:

According to the inspire database as of June 3, 2024, I am author of 176 papers (submitted manuscripts and articles, release notes, conference proceedings and other reports and notes) with 15000 citations and an h-index of 60. Out of these are 88 published (or accepted for publication) in peer-reviewed journals (with 7756 citations and an h-index of 46).

Ten Most Important Publications

[1] A. H. Hoang, S. Plätzer and D. Samitz, *On the Cutoff Dependence of the Quark Mass Parameter in Angular Ordered Parton Showers*, *JHEP* **10** (2018) 200, [1807.06617].

[2] A. H. Hoang, C. Lepenik and M. Preisser, *On the Light Massive Flavor Dependence of the Large Order Asymptotic Behavior and the Ambiguity of the Pole Mass*, *JHEP* **09** (2017) 099, [1706.08526].

[3] M. Butenschoen, B. Dehnadi, A. H. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Top Quark Mass Calibration for MC Event Generators*, *Phys. Rev. Lett.* **117** (2016) 232001, [1608.01318].

[4] A. H. Hoang, D. W. Kolodrubetz, V. Mateu and I. W. Stewart, *C-parameter distribution at N3LL including power corrections*, *Phys. Rev.* **D91** (2015) 094017, [1411.6633].

[5] R. Abbate, M. Fickinger, A. H. Hoang, V. Mateu and I. W. Stewart, *Thrust at N^3LL with Power Corrections and a Precision Global Fit for $\alpha_s(M_Z)$*, *Phys. Rev.* **D83** (2011) 074021, [1006.3080].

[6] S. Fleming, A. H. Hoang, S. Mantry and I. W. Stewart, *Jets from massive unstable particles: Top-mass determination*, *Phys. Rev.* **D77** (2008) 074010, [hep-ph/0703207].

[7] A. H. Hoang and I. W. Stewart, *Ultrasoft renormalization in nonrelativistic QCD*, *Phys. Rev.* **D67** (2003) 114020, [hep-ph/0209340].

[8] A. H. Hoang and T. Teubner, *Top quark pair production close to threshold: Top mass, width and momentum distribution*, *Phys. Rev.* **D60** (1999) 114027, [hep-ph/9904468].

[9] A. H. Hoang, Z. Ligeti and A. V. Manohar, *B decays in the upsilon expansion*, *Phys. Rev.* **D59** (1999) 074017, [hep-ph/9811239].

[10] H. E. Haber, R. Hempfling and A. H. Hoang, *Approximating the radiatively corrected Higgs mass in the minimal supersymmetric model*, *Z. Phys.* **C75** (1997) 539–554, [hep-ph/9609331].

Peer-Reviewed Publications (last 5 years)

[1] A. H. Hoang, S. Mantry, A. Pathak and I. W. Stewart, *Nonperturbative Corrections to Soft Drop Jet Mass*, *JHEP* **12** (2019) 002, [1906.11843].

[2] A. H. Hoang, C. Lepenik and M. Stahlhofen, *Two-Loop Massive Quark Jet Functions in SCET*, *JHEP* **08** (2019) 112, [1904.12839].

[3] P. Azzi et al., *Report from Working Group 1*, *CERN Yellow Rep. Monogr.* **7** (2019) 1–220, [1902.04070].

[4] CLICDP collaboration, H. Abramowicz et al., *Top-Quark Physics at the CLIC Electron-Positron Linear Collider*, *JHEP* **11** (2019) 003, [1807.02441].

[5] A. H. Hoang, S. Plätzer and D. Samitz, *On the Cutoff Dependence of the Quark Mass Parameter in Angular Ordered Parton Showers*, *JHEP* **10** (2018) 200, [1807.06617].

[6] F. Bach, B. C. Nejad, A. Hoang, W. Kilian, J. Reuter, M. Stahlhofen et al., *Fully-differential Top-Pair Production at a Lepton Collider: From Threshold to Continuum*, *JHEP* **03** (2018) 184, [1712.02220].

[7] A. H. Hoang, C. Lepenik and M. Preisser, *On the Light Massive Flavor Dependence of the Large Order Asymptotic Behavior and the Ambiguity of the Pole Mass*, *JHEP* **09** (2017) 099, [1706.08526].

[8] A. H. Hoang, A. Jain, C. Lepenik, V. Mateu, M. Preisser, I. Scimemi et al., *The MSR mass and the $\mathcal{O}\left(\Lambda_{\rm QCD}\right)$ renormalon sum rule*, *JHEP* **04** (2018) 003, [1704.01580].

[9] M. Butenschoen, B. Dehnadi, A. H. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Top Quark Mass Calibration for MC Event Generators*, *Phys. Rev. Lett.* **117** (2016) 232001, [1608.01318].

[10] A. H. Hoang, P. Pietrulewicz and D. Samitz, *Variable Flavor Number Scheme for Final State Jets in DIS*, *Phys. Rev.* **D93** (2016) 034034, [1508.04323].

[11] A. H. Hoang, A. Pathak, P. Pietrulewicz and I. W. Stewart, *Hard Matching for Boosted Tops at Two Loops*, *JHEP* **12** (2015) 059, [1508.04137].

[12] B. Dehnadi, A. H. Hoang and V. Mateu, *Bottom and Charm Mass Determinations with a Convergence Test*, *JHEP* **08** (2015) 155, [1504.07638].

[13] A. H. Hoang, D. W. Kolodrubetz, V. Mateu and I. W. Stewart, *Precise determination of α_s from the C-parameter distribution*, *Phys. Rev.* **D91** (2015) 094018, [1501.04111].

[14] A. H. Hoang, D. W. Kolodrubetz, V. Mateu and I. W. Stewart, *C-parameter distribution at N3LL including power corrections*, *Phys. Rev.* **D91** (2015) 094017, [1411.6633].

[15] P. Pietrulewicz, S. Gritschacher, A. H. Hoang, I. Jemos and V. Mateu, *Variable Flavor Number Scheme for Final State Jets in Thrust*, *Phys. Rev.* **D90** (2014) 114001, [1405.4860].

[16] A. H. Hoang and M. Stahlhofen, *The Top-Antitop Threshold at the ILC: NNLL QCD Uncertainties*, *JHEP* **05** (2014) 121, [1309.6323].

[17] S. Gritschacher, A. Hoang, I. Jemos and P. Pietrulewicz, *Two loop soft function for secondary massive quarks*, *Phys. Rev.* **D89** (2014) 014035, [1309.6251].

[18] S. Gritschacher, A. H. Hoang, I. Jemos and P. Pietrulewicz, *Secondary Heavy Quark Production in Jets through Mass Modes*, *Phys. Rev.* **D88** (2013) 034021, [1302.4743].

Non-Peer-Reviewed Publications (last 5 years)

[1] J. Reuter, B. C. Nejad, A. Hoang, W. Kilian, M. Stahlhofen, T. Teubner et al., *Exclusive Top Threshold Matching at Lepton Colliders*, *PoS* **ICHEP2018** (2019) 654, [1811.03950].

[2] J. R. Andersen et al., *Les Houches 2017: Physics at TeV Colliders Standard Model Working Group Report*, in *10th Les Houches Workshop on Physics at TeV Colliders (PhysTeV 2017) Les Houches, France, June 5-23, 2017*, 2018, 1803.07977.

[3] B. Dehnadi, A. H. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Monte Carlo Top Quark Mass Calibration*, *PoS* **RADCOR2017** (2018) 062, [1803.02321].

[4] A. H. Hoang, C. Lepenik and M. Preisser, *On the Light Massive Flavor Dependence of the Top Quark Mass*, *PoS* **RADCOR2017** (2018) 051, [1802.04334].

[5] J. Reuter, F. Bach, B. C. Nejad, A. Hoang, W. Kilian, J. Lindert et al., *Exclusive top production at a Linear Collider at and off the threshold*, in *International Workshop on Future Linear Collider (LCWS2017) Strasbourg, France, October 23-27, 2017*, 2018, 1801.08083.

[6] M. Butenschoen, B. Dehnadi, A. H. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Top quark mass calibration for Monte-Carlo event generators*, *PoS* **Hadron2017** (2018) 189.

[7] A. H. Hoang, C. Lepenik and M. Preisser, *On the Light Massive Flavor Dependence of the Top Quark Mass*, *EPJ Web Conf.* **158** (2017) 04005.

[8] A. H. Hoang, S. Mantry, A. Pathak and I. W. Stewart, *Extracting a Short Distance Top Mass with Light Grooming*, 1708.02586.

[9] A. H. Hoang, D. W. Kolodrubetz, V. Mateu and I. W. Stewart, *C Parameter at $N^\beta LL$*, in *Proceedings, Parton Radiation and Fragmentation from LHC to FCC-ee: CERN, Geneva, Switzerland, November 22-23, 2016*, pp. 103–112, 2017.

[10] M. Butenschön, B. Dehnadi, A. H. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Calibration of the top quark mass for Monte-Carlo event generators*, *PoS* **ICHEP2016** (2016) 698.

[11] M. Butenschoen, B. Dehnadi, A. H. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Summing logarithms and factorization for massive quark initiated jets and the Pythia top quark mass*, *PoS* **LL2016** (2016) 066.

[12] M. Butenschoen, B. Dehnadi, A. Hoang, V. Mateu, M. Preisser and I. W. Stewart, *Top quark mass calibration for Monte-Carlo event generators*, *PoS* **DIS2016** (2016) 153.

[13] M. Vos et al., *Top physics at high-energy lepton colliders*, 1604.08122.

[14] B. Dehnadi, A. H. Hoang and V. Mateu, *New Charm and Bottom Quark Mass Determinations from QCD Sum Rules*, *Nucl. Part. Phys. Proc.* **270-272** (2016) 113–117.

[15] J. Reuter, F. Bach, B. Chokoufe Nejad, A. Hoang, W. Kilian, M. Stahlhofen et al., *Top Physics in WHIZARD*, in *Proceedings, International Workshop on Future Linear Colliders (LCWS15): Whistler, B.C., Canada, November 02-06, 2015*, 2016, 1602.08035.

[16] J. Reuter, B. Chokoufe, A. Hoang, W. Kilian, M. Stahlhofen, T. Teubner et al., *Automation of NLO processes and decays and POWHEG matching in WHIZARD*, *J. Phys. Conf. Ser.* **762** (2016) 012059, [1602.06270].

[17] D. d'Enterria and P. Z. Skands, eds., *Proceedings, High-Precision α_s Measurements from LHC to FCC-ee*, (Geneva), CERN, CERN, 2015.

[18] A. H. Hoang, D. W. Kolodrubetz, V. Mateu and I. W. Stewart, *State-of-the-art predictions for C-parameter and a determination of α_s*, *Nucl. Part. Phys. Proc.* **273-275** (2016) 2015–2021, [1501.04753].

[19] A. H. Hoang, V. Mateu and P. Pietrulewicz, *Secondary Production of Massive Quarks in Thrust*, *AIP Conf. Proc.* **1701** (2016) 050009, [1412.6976].

[20] A. H. Hoang, *The Top Mass: Interpretation and Theoretical Uncertainties*, in *7th Int. Workshop on Top Quark Physics (TOP2014) Cannes, France, September 28-October 3, 2014*, 1412.3649.

[21] B. Dehnadi, A. H. Hoang and V. Mateu, *Charm and Bottom Masses from Sum Rules with a Convergence Test*, in *8th International Workshop on the CKM Unitarity Triangle (CKM 2014) Vienna, Austria, September 8-12, 2014*, 2014, 1411.5597.

[22] A. H. Hoang, P. Pietrulewicz and D. Samitz, *Variable Flavor Number Scheme for Final State Jets*, *PoS* **DIS2014** (2014) 049, [1406.5885].

[23] S. Moch et al., *High precision fundamental constants at the TeV scale*, 1405.4781.

[24] D. Asner, A. Hoang, Y. Kiyo, R. Pöschl, Y. Sumino and M. Vos, *Top quark precision physics at the International Linear Collider*, in *Proceedings, 2013 Community Summer Study on the Future of U.S. Particle Physics: Snowmass on the Mississippi (CSS2013): Minneapolis, MN, USA, July 29-August 6, 2013*, 2013, 1307.8265, http://inspirehep.net/record/1245485/files/arXiv:1307.8265.pdf.

[25] H. Abramowicz et al., *The International Linear Collider Technical Design Report - Volume 4: Detectors*, 1306.6329.

[26] H. Baer, T. Barklow, K. Fujii, Y. Gao, A. Hoang, S. Kanemura et al., *The International Linear Collider Technical Design Report - Volume 2: Physics*, 1306.6352.