

## Curriculum Vitae

### Education

- PhD in Physics, University of Rochester, USA, 2001-2003. Thesis: “Applications of Perturbative QCD to Processes with Heavy Quarks”, Advisor Prof. Lynne H. Orr; hep-ph/0311101
- M.A. degree in Physics, University of Rochester, 1999-2001
- PhD Research Student, Bulgarian Academy of Sciences, Sofia, Bulgaria, 1997 – 1999
- M.Sc. degree in Theoretical Physics, Sofia University, Sofia, Bulgaria, 1990-1996.

### Professional Appointments

- Reader (Associate Professor) Cavendish Laboratory, University of Cambridge, October 2017 – Present
- Lecturer (Assistant Professor) Cavendish Laboratory, University of Cambridge, October 2013 – 2017
- Official Fellow, Emmanuel College, Cambridge, UK, October 2013 - Present
- Fellow, Theory Division, CERN, Switzerland, February 2011 – Sep 2013
- The First US LHC Theory Initiative Fellow, Stony Brook University, USA, Mar 2008 – Jan 2011
- Postdoctoral researcher, University of Hamburg, Hamburg, Germany, Dec 1, 2007 – March 2008
- Research assistant, Dept. of Mathematics, University of Liverpool, UK, Oct 1, 2007- Dec 1, 2007
- Alexander von Humboldt Research Fellow. Host: DESY, Germany, 2006 – 2007
- Postdoctoral Fellow, DESY, Germany, 2005 – 2006
- Postdoctoral Researcher, University of Hawaii, USA, 2003 – 2005

### Grants and Awards

- ERC Consolidator grant, approx. £1.34M, 2016
- COFUND Senior Research Fellow, Trevelyan College, Durham University, 2015
- Isaac Newton Trust Grant, approx. £45k, 2014
- Ernest Rutherford Grant (STFC), approx. £412k, 2014
- UK STFC Ernest Rutherford Fellowship, approx. £465k, 2013
- The Inaugural US LHC Theory Initiative & NSF Fellowship, \$150k, 2008-2011
- Alexander von Humboldt Foundation Research Fellowship, approx. €40k, 2006-2007
- National Research Fellowship in Theoretical and Mathematical Physics, Bulgarian Academy of Sciences 1997-1999

### Scientific Publications (listed separately)

- 56 Published papers
- 14 Conference Proceedings
- 7800 citations (inSPIRE database, as of 01 Jan 2019)

### Teaching and Supervision

- **Postdoc Supervision:**
  - Cambridge University (2014 - present): 7 postdocs (Ozan Erdogan, David Heymes, Andrew Papanastasiou, Stefano Boselli, Zahari Kassabov, Rene Poncelet, Mathieu Pellen)
- **Student Research Supervision:**
  - Cambridge University (2014 - present): 3 PhD students (Matthew Lim, Herschel Chawdhry, Andrei Popescu)
  - Cambridge University (2014 - 2016): Ten Part III student projects (Master level)
  - DESY, Germany (2006): one undergraduate student at the DESY summer student program

- **Teaching:**
  - Cavendish Laboratory, Cambridge: 4-th year Particle Physics course
  - Cavendish Laboratory, Cambridge: Annual graduate course on QCD and Standard Model at high-energy colliders.
  - Emmanuel College, Cambridge (since 2014): Physics 1A undergraduate student supervision.
  - Teaching Assistant, University of Rochester, Rochester NY, USA, 2000 – 2001.
- **Summer school teaching:**
  - “Summer School and Workshop on the Standard Model and Beyond”, Corfu, Greece, Aug - Sep, 2016.
  - 6<sup>th</sup> NExT PhD Workshop, University of Sussex, UK, June 2016.
  - Three lectures on precision LHC physics, IPMU, Tokyo University, Japan, Feb 2016.
  - European CERN-JINR School of High-Energy Physics, Bansko, Bulgaria, Sep 2015.
  - Institut d'Etudes Scientifiques de Cargese, Cargese, Corsica, July 2014.
  - 7th International Conference and School on Particle Physics "Trends in Particle Physics - Primorsko 2014", Primorsko, Bulgaria, June 2014.
  - 6th International Conference and School on Particle Physics "Trends in Particle Physics - Primorsko 2012", Primorsko, Bulgaria, June 2012.

### Professional Activities

- Member of IAC for annual Top Physics Workshop (since 2015)
- Member of the Organizing Committee for the Workshop “Top Quark Physics at the Precision Frontier”, Fermilab, USA, 16-18 Jan 2018
- Convener for the EPS 2017 Conference, Venice, Italy July 2017
- Main organizer of the Workshop “Scales and scale setting”, Cambridge, March 2017
- Main organizer of the annual Workshop PSR2017, Cambridge March, 2017
- Member of the International Program Committee for the conference “Precision theory for precision measurements at LHC and future colliders”, Quy-Nhon, Vietnam, Sep 2016
- Main organizer of the topical Workshop on ttbar differential distributions, Cannes, France, Sep 2014.
- Convener of the heavy flavor group at the international conference QCD@LHC2014, Aug. 2014, Susdal, Russia.
- Contributing to the activities of two subgroups (Top physics & QCD) of the US Energy Frontier initiative (<http://www.snowmass2013.org>). Top mass subgroup coordinator.
- Top-physics parallel session convener, HCP2012 Symposium, Kyoto Japan, Nov. 2012
- Discussion leader, sixth CERN-Fermilab Hadron Collider Physics Summer School, CERN, June 8-17, 2011
- Co-organizer of Brookhaven Forum 2008: “Terra Incognita: From LHC to Cosmology”, 6-8 Nov. 2008
- Referee: JHEP, PLB, Physical Review D, Physical Review Letters, EPJC, Nuclear Physics B

### Visiting Scientist

- Princeton University, 2017-
- IPMU, University of Tokyo, 2016
- Stony Brook University, 2011-2012
- RWTH, Aachen, Germany, February, 2011
- Brookhaven National Lab, Since 2008-2011
- The University of Hamburg, November, 2007
- Laboratoire de Physique Theorique et Hautes Energies (LPTHE), Universites Paris VI and Paris VII, Paris, France, June 2007, January 2007
- Fermi National Laboratory, USA, June-July 2006
- SLAC, Stanford, USA, June 2006

### Participation at Workshops

1. Regular participant in the TopLHC Working Group

2. Top@LC, Tohoku University, Sendai, Japan, June 2018
3. High Energy /High Luminosity LHC Workshop, CERN, Nov 2017
4. CTEQ Collaboration Workshop, Fermilab, Oct 2017
5. Workshop on “Scattering Amplitudes”, MIAPP, Munich, Germany, Aug 2017
6. Workshop “Precision Computations”, MIAPP, Munich, Germany, Aug 2017
7. CLIC Physics Workshop, CERN, July 2017
8. SEARCH, Oxford, Sep 2016.
9. KITP, Santa Barbara, March-April 2016.
10. PH-2016 Workshop, KEK, Japan, Feb 2016.
11. Workshop on  $\alpha_s$ , CERN, Oct 2015.
12. Top 2015, Ischia, Italy, Sep 2015.
13. Top 2014, Cannes, Sep-Oct 2014.
14. Topical workshop on top quark differential distributions, Cannes, Sep 2014.
15. Mini-workshop on top mass measurements, CERN, May 2014.
16. Workshop on “QCD Tools for LHC Physics”, Fermilab, Nov 2013.
17. Snowmass Energy Frontier Workshop, July 2013, Seattle, USA.
18. Snowmass Energy Frontier Workshop, April 2013, BNL, USA.
19. Hadron Collider Physics Symposium 2012 "HCP2012", Nov. 2012, Kyoto, Japan.
20. Seventh Workshop on the CKM Unitarity Triangle, Cincinnati, Ohio, September 2012.
21. Workshop on “Tools for precision and discovery physics with top quarks”, CERN, July 2012.
22. Workshop on top physics “From charge asymmetry to the boosted regime”, CERN, May 2012.
23. Rencontres de Moriond workshop on "QCD and High Energy Hadronic Interactions", La Thuile, Italy, March, 2012.
24. CERN Theory Institute, CERN, Geneva, Switzerland, August 2011.
25. Invitation for the 2010 Summer Aspen workshop “Forefront QCD and LHC Discoveries”.
26. “LHC@BNL: Joint Theory/Experiment Workshop on Early Physics at the LHC”, Brookhaven National Lab, June 2009.
27. Theory Institute on Top Quark Physics, CERN, May 2009.
28. Fellow in residence at the workshop "From Twistors to Monte Carlos" at the Galileo Galilei Institute, Florence, October 2007.
29. KET workshop on QCD and electroweak physics at the LHC, MPI-Munich, July 2007.
30. HERA-LHC workshop, DESY, Hamburg, March 2007.
31. KET workshop on QCD and electroweak physics at the LHC, DESY-Hamburg, October 2006.
32. DESY LHC standard model workshop, DESY-Zeuthen, October 2006.
33. HP2 workshop, ETH Zurich, September 2006.
34. HERA-LHC workshop, CERN, June 2006.
35. Loops and Legs in Quantum Field Theory 2006, 23-28 April 2006, Eisenach, Germany.
36. 41st Rencontres de Moriond workshop on "QCD and High Energy Hadronic Interactions", La Thuile, Italy, March 18-25, 2006.
37. DESY Theory Workshop 2006, Hamburg, Germany, September 2005.
38. SuperB Factory Workshop, University of Hawaii, April 2005.
39. Workshop on LHC/ILC Synergies, SLAC, March 2005.
40. “Collider Physics”, KITP, UCSB, March-April 2004.
41. Theory Institute 2004 on Supersymmetry, Extra Dimensions and Higgs Bosons, Argonne National Laboratory, May 2004.

### Invited Seminars, Plenary and Conference Talks

1. Loopfest 2018, Michigan State University, July 2018
2. Linear Collider Workshop, Sendai, Japan, June 2018

3. PDFforLHC WG meeting, CERN, March 2018
4. HL-LHC Trigger Workshop, Princeton, Jan 2018
5. Loopfest 2017, Argonne National Lab, June 2017
6. Invited Plenary talk at the QCD@LHC Conference, Debrecen, Hungary, Aug 2017.
7. Invited Plenary talk at the Conference LHCP2016, Lund, Sweden, June 2016.
8. Invited plenary overview talk, Conference on Precision for LHC Run 2, KITP Santa Barbara, May 2016
9. Invited seminar in INRNE, Sofia, Bulgaria, March 2016.
10. Invited talk on “QCD@LHC: theory developments”, PH-2016 Workshop KEK, Japan, Feb 2016.
11. Invited Seminar in KIT, Karlsruhe, October 2015.
12. Invited Seminar at the University of Birmingham, June 2015.
13. Plenary talk on heavy flavors, DIS2015, SMU, Dallas, April 2015.
14. Summary of the “Top quark and HF group”, SM@LHC, Florence, April 2015
15. Invited talk at Top@20, Fermilab, April, 2015
16. Invited Seminar at Oxford, Nov 2014.
17. Invited Seminar at Imperial College, London, Nov 2014.
18. Overview presentation at the Workshop Top 2014, Cannes Sep-Oct 2014.
19. Presentation at the “Topical workshop on top quark differential distributions”, Cannes, Sep 2014.
20. Invited talk at the CKM 2014 Workshop, Vienna, Sep 2014.
21. Talk on “Top mass extraction from dilepton events”, CERN, May 2014.
22. Seminar invitation, Higgs Center, University of Edinburgh, May 2014.
23. Invited talk on “On the top mass determination”, at Rencontres de Physique de la Vallee d'Aoste, Feb 2014.
24. Seminar Invitation, IPPP Durham, Feb 2014.
25. Seminar invitation, University College, London, Jan. 2014.
26. Invited talk on “Status of NNLO calculations”, “QCD Tools for LHC Physics” workshop, Fermilab, Nov 2013.
27. Seminar invitation, University of Zurich, Nov 2013
28. Seminar invitation, University of Glasgow, Oct 2013.
29. Colloquium invitation, DAMPT, University of Cambridge, Oct 2013.
30. Invited presentation at “LHC -- The first part of the journey”, KITP, Santa Barbara, July 2013.
31. Plenary talk at the 2013 Lepton Photon Conference, San Francisco, June 2013.
32. Invited Seminar, RWTH Aachen, Germany, June 2013.
33. Invited seminar at the Cavendish Lab, University of Cambridge, UK, June 2013.
34. Invited presentation at the conference Loopfest 2013, Florida State University, May 2013.
35. Theoretical Physics Seminar, CERN, April 2013.
36. Colloquium at the University of Hawaii, March 2013.
37. Invited talk at “Rencontres de Physique de la Vallee d'Aoste”, Aosta, Italy, Feb 2013.
38. Invited talk at the University of Sussex, UK, Dec. 2012.
39. Invited plenary talk on top physics at “HCP 2012”, Kyoto, Japan, November 2012.
40. Invited seminar at the University of Gottingen, Nov. 2012
41. Invited talk at the “CKM 2012” workshop, Cincinnati, Ohio, USA, September, 2012.
42. Invited seminar at the University of Buffalo, Sep 2012.
43. Invited Colloquium speaker, Fordham University, New York City, Sep. 2012.
44. Invited seminar at Brookhaven National Lab, Sep, 2012.
45. Invited talk at the workshop “QCD @ LHC 2012”, Michigan State University, August 2012.
46. Talk at the top physics workshop, CERN, July 2012.
47. Invited seminar, University of Freiburg, Germany, July 2012.

48. Invited contribution to the conference “Trends in Particle Physics, Primorsko 2012”, Primorsko, Bulgaria, June 2012.
49. Invited plenary talk “Top Physics theory” at the PLHC 2012 Conference, Vancouver, Canada, May 2012.
50. Invited talk on “Top-pair production at NNLO QCD” at Loopfest 2012, Pittsburgh, Pennsylvania, USA, May 2012.
51. Invited talk on “NNLO corrections to  $q\bar{q} \rightarrow t\bar{t}$ ” at the workshop “Top physics: from charge asymmetry to the boosted regime”, CERN, May, 2012.
52. “Precision top physics at hadron colliders”, Invited presentation at Loops and Legs in Quantum Field Theory, Wernigerode, Germany, April 2012.
53. “Progress in precision top physics”, Invited seminar at MPI Munich, April 2012.
54. “Latest theoretical developments in top physics at hadron colliders”, Invited presentation at DIS 2012, Bonn Germany, March 2012.
55. “Theoretical developments in top physics at hadron colliders”, Invited presentation at Moriond QCD, La Thuile Italy, March 2012.
56. “Precision physics: the road to discoveries at the LHC”, Invited seminar, the University of Edinburgh, March 2012.
57. “Calculation of the 1-loop soft current with massive fermions”, CERN TH Institute, 8 Aug 2011.
58. “Current challenges and future prospects in collider physics”, CERN, 27 May 2011.
59. “Two-loop effects in heavy flavor processes at hadron colliders”, invited talk at Loopfest 2010. June 2010.
60. “Current and future elementary particle colliders: challenges we face in the quest for discoveries”, Colloquium at Texas Tech University Department of Physics. April 2010.
61. “Massive gauge theory amplitudes and application to LHC physics”, invited seminar at INRNE, Sofia Bulgaria, Dec. 2009
62. “Adding precision to top physics at hadron colliders”, talk at the LHC Theory Initiative meeting, Fermilab, Oct 2009
63. “New developments in the structure of massive gauge amplitudes and application to precision top physics at the LHC”, Invited seminar at Johns Hopkins University, Oct. 2009
64. “The Top and QCD”, invited plenary talk at “LHC@BNL: Joint Theory/Experiment Workshop on Early Physics at the LHC”, BNL, June 2009
65. “The Top Quark Mass”, Theory Institute on Top Quark Physics, CERN, May 2009
66. “Resummation and top pair production” Loopfest 8, Madison, May 2009
67. Invited overview talk “Top (pair) cross section calculations for the LHC” at the workshop “Standard model discoveries with early LHC data”, University College London, March 30 – April 01, 2009
68. Invited seminar “Precision Phenomenology at the heart of the LHC”, Stony Brook University, March 2009
69. “Top pair production at Hadron Colliders: newest developments”, Invited presentation for the CTEQ collaboration, Feb. 2009
70. “Top pair production at hadron colliders”, Fermilab theory seminar, Jan. 2009
71. “Top pair production at Hadron Colliders: new developments you need to know about”, Invited presentation for DØ collaboration, Fermilab, Jan. 2009
72. “The LHC Revolution”, Florida State University, Jan. 2009
73. “Top pair production at Hadron Colliders: a critical review”, Brookhaven National Lab, Dec. 2008
74. “(Some) New stuff for top-pair production at Hadron Colliders”, talk at Loopfest 7, Buffalo, May 2008
75. “Top Physics: a window to the Terascale”, University of Hawaii, Honolulu, March 2008
76. “New developments in top physics”, Southern Methodist University, Dallas, Feb. 2007
77. “Challenges in Top Physics”, CEA-Saclay, France, December 2007
78. “News in Top Physics”, Humboldt University – Berlin, Jan. 2008
79. “Top Physics at the Terascale” University of Göttingen, Germany, Dec. 2007
80. “Perturbative QCD with heavy flavors: theoretical advances and LHC challenges” seminar at CEA-Saclay, France, December 2007

81. "Precision theoretical predictions for heavy quark production at the new generation of elementary particle collider experiments", Emmy Noether Fellowship Program Meeting, Frankfurt, Germany, Nov.2007
82. "QCD processes with massive fermions: advances and challenges" University of Milano, Nov. 2007
83. Invited plenary talk on "Differential Cross Sections at NNLO" at the DESY Theory Workshop 2007 "String Theory meets Collider Physics" September 2007
84. "Heavy flavor production at the LHC: towards the NNLO QCD corrections", KET workshop on QCD and electroweak physics at the LHC, MPI-Munich, July 2007
85. "QCD at higher loops and legs" seminar at the University of Mainz, June 2007
86. "What to expect at the future elementary particle experiments", University of Edinburgh, May 2007
87. "The singular behavior of massive QCD amplitudes", SFB/TR-9 meeting, Aachen, February 2007
88. "Precision in the heavy flavor sector: why it is needed and how to achieve it", seminar at the University of Liverpool, January 2007
89. "Higher-order corrections to heavy-flavor processes", seminar at IPPP Durham, January 2007
90. "Recent developments towards NNLO precision in the heavy flavor sector", seminar at the University of Hamburg, December 2006
91. "Precision studies in the heavy flavor sector", seminar at CERN, November 2006
92. "Factorization and evolution for PDFs and fragmentation functions", DESY LHC standard model workshop, DESY-Zeuthen, October 2006
93. Invited overview talk on "Structure functions and parton densities for LHC", KET workshop on QCD and electroweak physics at the LHC, DESY-Hamburg, October 2006
94. "On the IR singularities of massive QCD amplitudes beyond one loop", HP2 workshop, ETH, Zurich, September 2006
95. "Heavy quark fragmentation at NNLO: questions and answers with LHC in mind", University of Freiburg, July 2006
96. "Heavy quark fragmentation at NNLO: from LEP to the Tevatron and LHC", Fermilab, June 2006
97. "Three-loop time-like splitting functions in Mellin space and NNLO fragmentation", Loopfest V, SLAC, June 2006
98. "Progress towards b-fragmentation at NNLO", HERA-LHC workshop, CERN, June 2006
99. "Higher order calculations in Mellin space and application to time-like processes", invited talk at "Loops and Legs in Quantum Field Theory", April 23-28, 2006, Eisenach, Germany
100. "Analytical evaluation of differential distributions in Mellin space", Rencontres de Moriond workshop on "QCD and High Energy Hadronic Interactions", La Thuile, Italy, March 18-25, 2006
101. "Higher order perturbative calculations in Mellin space", University of Zurich, Switzerland, Feb. 2006
102. "Perturbative aspects of light- and heavy-flavor fragmentation in NNLO QCD", DESY, Zeuthen, October 2005
103. "The photon spectrum in  $B \rightarrow s + \gamma$  in NNLO QCD", Theory workshop DESY, Hamburg, Sep. 2005
104. "B- $\rightarrow$  s- $\gamma$ : the photon spectrum at NNLO", SLAC, June 2005
105. "The photon spectrum in  $B \rightarrow s + \gamma$  at NNLO", PHENO 2005, Wisconsin, Madison, May 2005
106. "Heavy Quark Fragmentation Function", DIS 2005, Madison, Wisconsin, April 2005
107. "Soft gluon resummation for heavy quark production", DIS 2005, Madison, Wisconsin, April 2005
108. "Standard Model Uncertainties in  $B \rightarrow s + \gamma$  Branching Fraction and Spectrum", SuperB Factory Workshop, University of Hawaii, April 2005
109. "Heavy Quark Fragmentation Function at NNLO", LCWS2005, Stanford University, March 2005
110. "Top mass determination from b+lepton invariant mass at the LHC and ILC", Workshop on LHC/ILC Synergies, SLAC, March 2005
111. "Heavy Quark Perturbative Fragmentation Function at NNLO", PHENO2004, Madison, Wisconsin, April 2004
112. "Heavy Quark Perturbative Fragmentation Function at NNLO", Fermilab, April 2004
113. "Heavy Quark Perturbative Fragmentation Function at NNLO". Talk at Loopfest III (KITP, UCSB), April 2004

114. "Soft-gluon Resummation for Heavy Quark Production in CC DIS", PHENO 2003, Madison, May 2003
115. "Bottom Quark Fragmentation in Top Quark Decay", Argonne National Lab, Argonne, Feb. 2003
116. "Bottom Quark Fragmentation in Top Quark Decay", Southern Methodist University, Dallas, Feb. 2003
117. "The Radion in the Randall-Sundrum Model", Oklahoma State University, Stillwater, Oklahoma, November 2002
118. "Top Decay and Bottom Fragmentation in NLO QCD", DPF 2002, College of William and Mary, Williamsburg, Virginia, May 2002
119. "Top Decay and Bottom Fragmentation in NLO QCD", PHENO 2002, Madison, Wisconsin, April 2002
120. "Hierarchy problem and extra dimensions", Particle Physics Seminar, University of Rochester, Rochester, New York, April 2002
121. "Bound States in a Model of QFT with Higher Derivatives", Regular Seminar in Theoretical High Energy Physics, INRNE, Sofia, Bulgaria, September 1997