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Education

2009 PhD in physics, Niels Bohr Institute
2006 MSc in physics, Niels Bohr Institute
2004 BSc in physics and mathematics, Niels Bohr Institute
2002 Studies in physics and mathematics at Caltech, fall 2002

Scientific Positions

2013- Associate professor, University of Southern Denmark, CP3-Origins
2011-2013 Postdoctoral researcher, Harvard University
2009-2011 Postdoctoral researcher, C. N. Yang Institute for Theoretical Physics, Stony Brook
2007-2008 Marie Curie Fellow, CERN Theory Division

Short-term visits

2019 C. N. Yang Institute for Theoretical Physics, Stony Brook University, 1 month
2019 University of Toronto, 2 months
2017 C. N. Yang Institute for Theoretical Physics, Stony Brook University, 1 month
2014 CERN, 1 month
2008 SLAC, Stanford University, 3 months
2007 CERN, 2 months
2005 CERN, 1 month

Grants and Awards

2016 "Quantum Rascals - Outreach Program". A. P. Møller Foundation. (4mill DKr). With F. Sannino & C. Pica
2011 "Sapere Aude: DFF Ung-Eliteforsker" prize awarded by the Danish Agency for Science, Technology and Innovation
2011 FNU postdoc fellowship (2 years)
2008 Knud Højgaard travel grant to visit SLAC, Stanford
2007 Marie Curie Fellowship (1 year)
2005 Lørup Graduate travel grant to visit CERN
2002 Niels Bohr Institute – Caltech Undergraduate Exchange Fellowship

Memberships

Board Member, Danish Physical Society, 2016-2021
Associate of the European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*²).
Marie Curie Alumni Association.

Organize

Co-organizer of "Continuum and Lattice Approaches to the Infrared Behavior of Conformal and Quasi-Conformal Gauge Theories" workshop, Simons Center for Geometry and Physics, 2018
Co-organizer of "Origin of Mass" workshop, Odense, 2013-2016
Co-organizer of Odense Winter School on Theoretical Physics, 2014-2018
Co-organizer of Autumn School on Particle Physics and Cosmology, Göttingen, 2013
Organizer of CP3 World and Fermi visiting programs 2013-2016.
Organizer of "Quantum City" cultural events.

Professional Activities

+30 talks given at international conferences and research centers.

Member of Internationalization committee at Faculty of Natural Science, SDU, 2017-present

Referee for: Physical Review Letters, Physical Review D, Physics Letters B, European Physical Journal C, Modern Physics Letters A.

Publications

Effect of Scheme Transformations on a Beta Function with Vanishing One-Loop Term

Ryttov, T. A. & Shrock, R., Sep 2020, In: Physical Review D. Particles and fields. 102, 5, 6 p., 056016.

Renormalization-Group Behavior of ϕ^3 Theories in $d=6$ Dimensions

Gracey, J. A., Ryttov, T. A. & Shrock, R., 15. Aug 2020, In: Physical Review D. Particles and fields. 102, 4, 9 p., 045016.

Properties of the ϵ -expansion, Lagrange inversion and associahedra and the O(1) model

Ryttov, T. A., 14. Apr 2020, In: Journal of High Energy Physics (JHEP). 2020, 4, 16 p., 72.

Scheme-Independent Series for Anomalous Dimensions of Higher-Spin Operators at an Infrared Fixed Point in a Gauge Theory

Ryttov, T. A. & Shrock, R., 1. Apr 2020, In: Physical Review D. Particles and fields. 101, 7, 18 p., 076018.

Possible new phase for adjoint QCD

Poppitz, E. & Ryttov, T. A., Nov 2019, In: Physical Review D. 100, 091901.

Ultraviolet to infrared evolution and nonperturbative behavior of $SU(N) \otimes SU(N-4) \otimes U(1)$ chiral gauge theories

Ryttov, T. A. & Shrock, R., 1. Sep 2019, In: Physical Review D. 100, 5, 20 p., 055009.

Large- N_c and Large- N_f Limits of $SU(N_c)$ Gauge Theories with Fermions in Different Representations

Girmohanta, S., Ryttov, T. A. & Shrock, R., Jun 2019, In: Physical Review D. 99, 11, 14 p., 116022.

Safe Glueballs and Baryons

Ryttov, T. A. & Tuominen, K., 30. Apr 2019, In: JHEP. 2019, 4, 173.

Scheme-Independent Calculations of Properties at a Conformal Infrared Fixed Point in Gauge Theories with Multiple Fermion Representations

Ryttov, T. A. & Shrock, R., 8. Nov 2018, In: Physical Review D. 98, 9, 17 p., 096003.

Scheme-Independent Calculations of Anomalous Dimensions of Baryon Operators in Conformal Field Theories

Gracey, J. A., Ryttov, T. A. & Shrock, R., 1. Jun 2018, In: Physical Review D. 97, 11, 14 p., 116018.

Duality in a Supersymmetric Gauge Theory From a Perturbative Viewpoint

Ryttov, T. A. & Shrock, R., 15. Mar 2018, In: Physical Review D. 97, 6, 8 p., 065020.

Physics of the Non-Abelian Coulomb Phase: Insights from Padé approximants

Ryttov, T. A. & Shrock, R., 15. Jan 2018, In: Physical Review D. 97, 2, 24 p., 025004.

β_{IR} at an Infrared Fixed Point in Chiral Gauge Theories

Ryttov, T. A. & Shrock, R., Jan 2018, In: Physical Review D. 97, 1, 11 p., 016020.

Conformal Phase Diagram of Complete Asymptotically Free Theories

Pica, C., Ryttov, T. A. & Sannino, F., 2017, In: Physical Review D. 96, 7, 14 p., 074015.

Higher-Order Scheme-Independent Calculations of Physical Quantities in the Conformal Phase of a Gauge Theory
Ryttov, T. A. & Shrock, R., 2017, In: Physical Review D. 95, 8, 085012.

Higher-order scheme-independent series expansions of $\gamma_{\bar{\psi}\psi,IR}$ and β_{IR} in conformal field theories
Ryttov, T. A. & Shrock, R., 2017, In: Physical Review D. 95, 10, 37 p., 105004.

Infrared fixed point physics in $so(N_c)$ and $Sp(N_c)$ gauge theories
Ryttov, T. A. & Shrock, R., 2017, In: Physical Review D. 96, 10, 17 p., 105015.

Question of a Possible Infrared Zero in the Beta Function of the Finite- N Gross-Neveu Model
Choi, G., Ryttov, T. & Shrock, R., 2017, In: Physical Review D. 95, 2, 10 p., 025012.

Scheme-independent calculations of physical quantities in an N=1 supersymmetric gauge theory
Ryttov, T. A. & Shrock, R., 2017, In: Physical Review D. 96, 10, 25 p., 105018.

Consistent Perturbative Fixed Point Calculations in QCD and Supersymmetric QCD
Ryttov, T. A., 2016, In: Physical Review Letters. 117, 7, p. 1-6 071601.

Infrared Zero of β and Value of γ_m for an SU(3) Gauge Theory at the Five-Loop Level
Ryttov, T. A. & Shrock, R., 2016, In: Physical Review D. 94, 10, p. 1-5 105015.

Quantum Critical Behaviour of Semisimple Gauge Theories
Kamuk Esbensen, J., Ryttov, T. A. & Sannino, F., 2016, In: Physical Review D. 93, 4, p. 1-13 045009.

Scheme-Independent Calculation of $\gamma_{\bar{\psi}\psi,IR}$ for an SU(3) Gauge Theory
Ryttov, T. A. & Shrock, R., 2016, In: Physical Review D. 94, 10, p. 1-5 105014.

Scheme-Independent Series Expansions at an Infrared Zero of the Beta Function in Asymptotically Free Gauge Theories
Ryttov, T. A. & Shrock, R., 2016, In: Physical Review D. 94, 12, p. 1-25 125005.

Nonperturbative results for two-index conformal windows
Bergner, G., Ryttov, T. A. & Sannino, F., 2015, In: Journal of High Energy Physics (JHEP). 2015, 12, 11 p., 54.

Conformal Behavior at Four Loops and Scheme (In)Dependence
Ryttov, T., 25. Sep 2014, In: Physical Review D. 056007 .

Vacuum Alignment with more Flavors
Ryttov, T., 3. Jun 2014, In: Physical Review D. 89, 116003.

Infrared fixed points in the minimal momentum subtraction scheme
Ryttov, T., 5. Mar 2014, In: Physical Review D. 89, 5, 056001.

Higher Loop Corrections to the Infrared Evolution of Fermionic Gauge Theories in the RI' Scheme
Ryttov, T., 2014, In: Physical Review D. 89, 9 p., 016013.

An Analysis of Scheme Transformations in the Vicinity of an Infrared Fixed Point
Ryttov, T. & Shrock, R., 28. Jun 2012, In: Physical Review D.

Scheme Transformations in the Vicinity of an Infrared Fixed Point
Ryttov, T. & Shrock, R., 11. Jun 2012, In: Physical Review D. 86, 5 p., 065032.

Comparison of Some Exact and Perturbative Results for a Supersymmetric $SU(N_c)$ Gauge Theory
Ryttov, T. & Shrock, R., 2012, In: Physical Review D.

Exceptional and Spinorial Conformal Windows

Mojaza, M., Pica, C., Ryttov, T. & Sannino, F., 2012, In: Physical Review D. 86, 7, p. 076012 14 p.

Technicolor Models with Color-Singlet Technifermions and their Ultraviolet Extensions

Ryttov, T. & Shrock, R., 1. Sep 2011, In: Physical Review D. 84, 5

Higher-Loop Corrections to the Infrared Evolution of a Gauge Theory with Fermions

Ryttov, T. & Shrock, R., 20. Nov 2010, In: Phys.Rev.D.

Patterns of Dynamical Gauge Symmetry Breaking

Chen, N., Ryttov, T. & Shrock, R., 18. Oct 2010, In: Phys.Rev.D.

Ultraviolet Extension of a Model with Dynamical Electroweak Symmetry Breaking by Both Top-Quark and Technifermion Condensates

Ryttov, T. & Shrock, R., 28. Jun 2010, In: Physical Review D.

Infrared Evolution and Phase Structure of a Gauge Theory Containing Different Fermion Representations

Ryttov, T. & Shrock, R., 2. Jun 2010, In: Phys.Rev.D.

Higher extended technicolor representations and fermion generations

Ryttov, T. & Shrock, R., 20. May 2010, In: Eur.Phys.J.C.

Generational Structure of Models with Dynamical Symmetry Breaking

Ryttov, T. & Shrock, R., 12. Apr 2010, In: Physical Review D.

Conformal House

Ryttov, T. & Sannino, F., 2010, In: International Journal of Modern Physics A. 25, 24, p. 4603-4521

The Electroweak Phase Transition in Ultra Minimal Technicolor

Jarvinen, M., Ryttov, T. & Sannino, F., 14. May 2009, In: Physical Review D. 79, p. 095008 18 p.

The Conformal Window and Walking Technicolor

Ryttov, T., 3. Feb 2009, In: Nucl.Phys.Proc.Suppl..

Extra Electroweak Phase Transitions from Strong Dynamics

Järvinen, M., Ryttov, T. A. & Sannino, F., 2009, In: Physics Letters B. B680, 3, p. 251-254

Supersymmetry Inspired QCD Beta Function

Ryttov, T. & Sannino, F., 2008, In: Physical Review D. 17 p.

Ultraminimal technicolor and its dark matter technicolor interacting massive particles

Ryttov, T. A. & Sannino, F., 2008, In: Physical Review D. 78, 11, 13 p., 115010.

Conformal Windows of $SU(N)$ Gauge Theories, Higher Dimensional Representations and The Size of The Unparticle World

Ryttov, T. & Sannino, F., 5. Nov 2007, In: Phys.Rev.D.

Minimal Walking Technicolor: Set Up for Collider Physics

Foadi, R., Frandsen, M. T., Ryttov, T. & Sannino, F., 12. Jun 2007, In: Physical Review D. 76, 5, 17 p., 055005.

Gauge Coupling Unification via A Novel Technicolor Model

Bjarke Gudnason, S., Rytov, T. & Sannino, F., 2007, In: Physical Review D. 76, 1, 9 p., 015005.

Gauge coupling unification via a novel technicolor model

Gudnason, S. B., Rytov, T. A. & Sannino, F., 1. Dec 2006, In: Spires. 19 p.

Hidden QCD in Chiral Gauge Theories

Rytov, T. & Sannino, F., 16. Sep 2005, In: Phys.Rev. D.

Chiral Models in Noncommutative $N=1/2$ Four Dimensional Superspace

Rytov, T. & Sannino, F., 12. Apr 2005, In: Phys.Rev. D.