Thomas Aaby Ryttov
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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*).

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, 2017-2021

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

Publications

Hadronic spectrum in the chiral large Nc extension of quantum chromodynamics
Kristensen, A. H. & Ryttov, T. A., 1. Jul 2024, In: Physical Review D. 110, 1, 24 p., 014012.

Comparative study of criticality conditions for anomalous dimensions using exact results in an N =1 supersymmetric gauge theory
Ryttov, T. A. & Shrock, R., 1. Dec 2023, In: Physical Review D. 108, 11, 10 p., 116021.

Anomalous dimensions at an infrared fixed point in an SU(Nc) gauge theory with fermions in the fundamental and antisymmetric tensor representations
Ryttov, T. A. & Shrock, R., Sept 2023, In: Physical Review D. 108, 5, 15 p., 056007.

Scheme and gauge dependence of QCD fixed points at five loops
Gracey, J. A., Mason, R. H., Ryttov, T. A. & Simms, R. M., 15. Aug 2023, In: Physical Review D. 108, 4, 045006.

Effect of Scheme Transformations on a Beta Function with Vanishing One-Loop Term
Ryttov, T. A. & Shrock, R., Sept 2020, In: Physical Review D. 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. 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. 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. 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) ⊗- SU (N-4) ⊗ - U (1) chiral gauge theories
Ryttov, T. A. & Shrock, R., 1. Sept 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: Journal of High Energy Physics. 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 (Nc) and Sp (Nc) 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. 2015, 12, 11 p., 54.

Conformal Behavior at Four Loops and Scheme (In)Dependence
Ryttov, T., 25. Sept 2014, In: Physical Review D. 90, 5, 056007 .

Vacuum Alignment with more Flavors
Ryttov, T., 3. Jun 2014, In: Physical Review D. 89, 11, 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. Sept 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: Physical Review D.

Patterns of Dynamical Gauge Symmetry Breaking
Chen, N., Ryttov, T. & Shrock, R., 18. Oct 2010, In: Physical Review 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: Physical Review D.

Higher extended technicolor representations and fermion generations
Ryttov, T. & Shrock, R., 20. May 2010, In: The European Physical Journal 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: Physical Review 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., Ryttov, T. & Sannino, F., 2007, In: Physical Review D. 76, 1, 9 p., 015005.

Gauge coupling unification via a novel technicolor model
Gudnarson, S. B., Ryttov, T. A. & Sannino, F., 1. Dec 2006, In: Spires. 19 p.

Hidden QCD in Chiral Gauge Theories
Ryttov, T. & Sannino, F., Jan 2006, In: Physical Review D. 016002.

Chiral Models in Noncommutative N=1/2 Four Dimensional Superspace
Ryttov, T. & Sannino, F., May 2005, In: Physical Review D. 71, 12, 125004.