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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\*<sup>\*</sup>).  
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 $N_c$ extension of quantum chromodynamics

Kristensen, A. H. & Rytto, 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

Rytto, 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 $SU(N_c)$ gauge theory with fermions in the fundamental and antisymmetric tensor representations

Rytto, 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., Rytto, 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

Rytto, T. A. & Shrock, R., Sept 2020, In: Physical Review D. 102, 5, 6 p., 056016.

### Renormalization-Group Behavior of $\phi^3$ Theories in $d=6$ Dimensions

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

### Properties of the $\epsilon$ -expansion, Lagrange inversion and associahedra and the $O(1)$ model

Rytto, 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

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

### Possible new phase for adjoint QCD

Poppitz, E. & Rytto, 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

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

### Safe Glueballs and Baryons

Rytto, 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

Rytto, 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., Rytto, 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.

**$\beta_{IR}$  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  $\gamma_{\psi\bar{\psi},IR}$  and  $\beta_{IR}$  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  $\beta\beta$  and Value of  $\gamma_m$  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., Rytto, T. A. & Sannino, F., 2009, In: Physics Letters B. B680, 3, p. 251-254

**Supersymmetry Inspired QCD Beta Function**

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

**Ultraminimal technicolor and its dark matter technicolor interacting massive particles**

Rytto, 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**

Rytto, T. & Sannino, F., 5. Nov 2007, In: Physical Review D.

**Minimal Walking Technicolor: Set Up for Collider Physics**

Foadi, R., Frandsen, M. T., Rytto, 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., Rytto, T. & Sannino, F., 2007, In: Physical Review D. 76, 1, 9 p., 015005.

**Gauge coupling unification via a novel technicolor model**

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

**Hidden QCD in Chiral Gauge Theories**

Rytto, T. & Sannino, F., Jan 2006, In: Physical Review D. 016002.

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

Rytto, T. & Sannino, F., May 2005, In: Physical Review D. 71, 12, 125004.