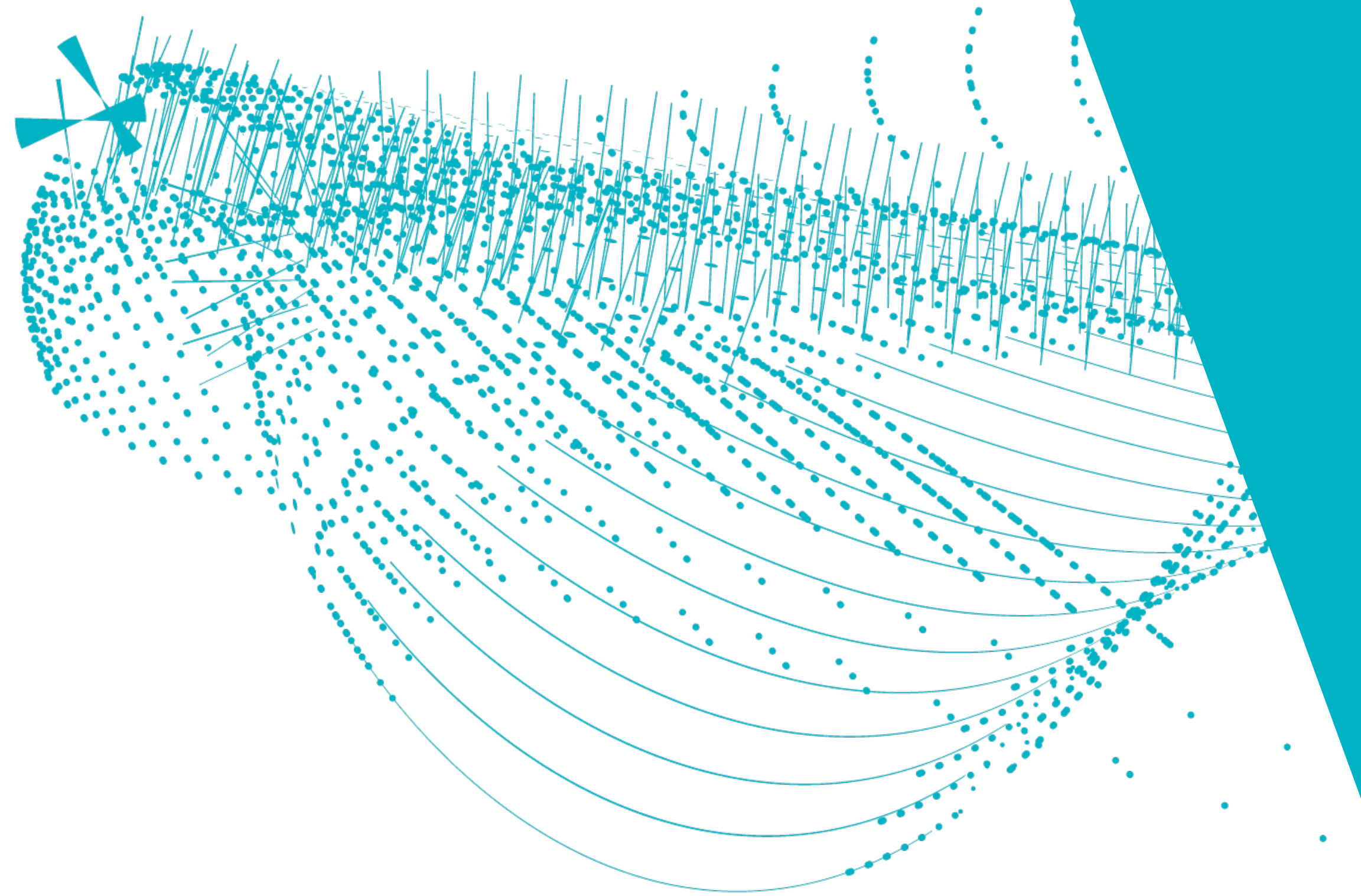




STAFF MEETING 15 OCTOBER 2021, UTRECHT

THEORY NEWS OCTOBER 2021

Robert Fleischer



THEORY GROUP RETURNING TO NIKHEF

In-person meetings have started up:

- Polder
- Journal Club
- Offices & corridors populated again...



Arrival of $O(10)$ new MSc students:

- Theory group remains an attractive place for students (UvA/VU, RU, MU) for conducting their projects.



THREE PHD DEFENCES IN SEPTEMBER

Jort Sinninghe Damsté (E. Laenen / UvA)

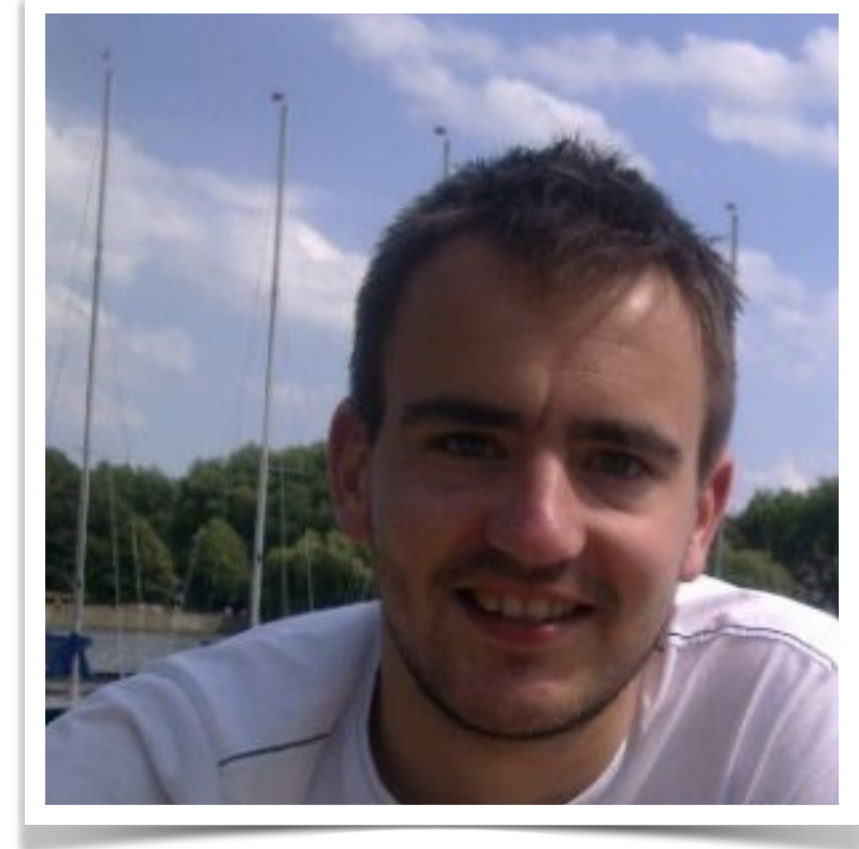
Rabah Abdul Khalek (J. Rojo / VU)

Pedro Cal (W. Waalewijn / UvA)

Many Congratulations!



VIDI GRANT FOR JORDY DE VRIES



The Little Neutral Particle that Could

Dr. J. (Jordy) de Vries, University of Amsterdam

Many questions remain about the matter in our Universe. Scientists do not know what dark matter is, where all the antimatter went, or how neutrinos acquire their masses. In this research it will be determined whether new neutrinos can solve these puzzles and how to reveal their existence experimentally.

Many Congratulations!

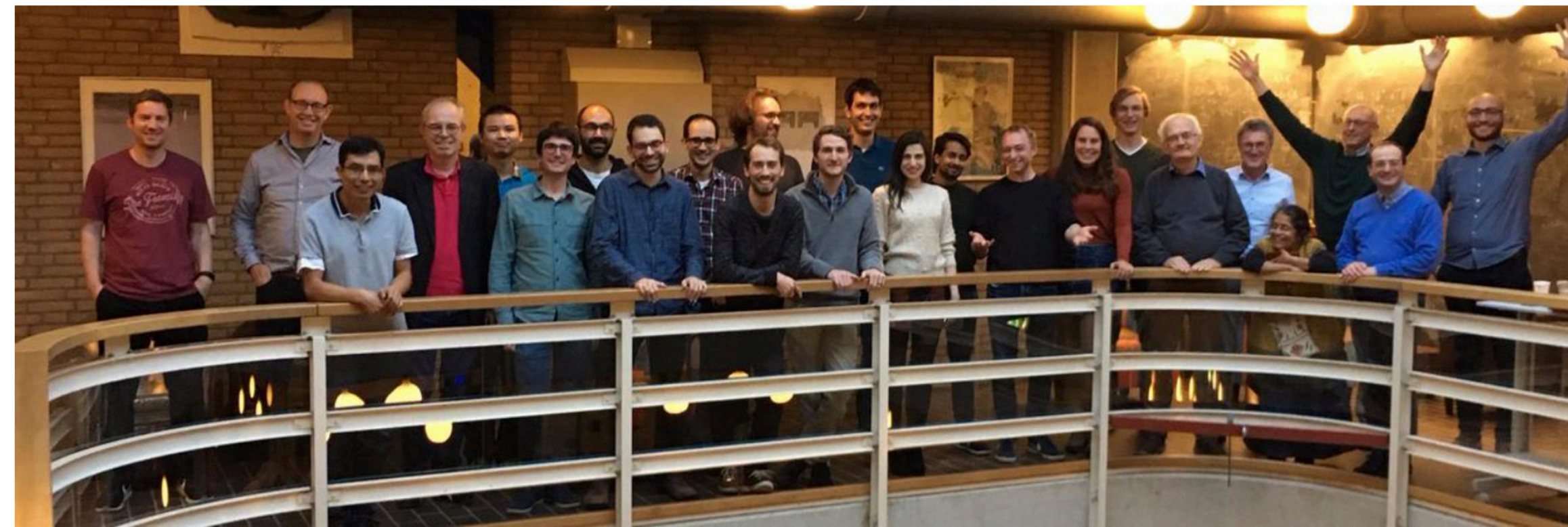


NEW THEORY GROUP WEBSITE IN NIKHEF STYLE



PEOPLE RESEARCH SOFTWARE ACTIVITIES FOR STUDENTS OUTREACH VACANCIES CONTACT

ZOEKEN



Theoretical physics at Nikhef

About Nikhef's Theory group

Welcome to the website of the **Theory Group** of Nikhef! Here you will find information about [who we are](#), what are our [research interests](#), how to [contact us](#), as well as related information which would be useful for bachelor and master students looking for a [project/internship](#) within our group and for prospective applicants to open PhD, postdoc, and staff [positions](#). For more general information about the Nikhef institute and partnership please go [here](#).

Many thanks to Melissa van der Sande, Martijn van Calmthout, Eleftheria Malami and Juan Rojo!

RESEARCH SNAPSHOTS ...

NIKHEF 2021-

Light-cone distribution amplitudes of light mesons with QED effects

MARTIN BENEKE,^a PHILIPP BÖER,^a JAN-NIKLAS TOELSTEDÉ,^a K. KERI VOS^{b,c}

Using $B_s^0 \rightarrow D_s^\mp K^\pm$ Decays as a Portal to New Physics

Robert Fleischer^{a,b} and Eleftheria Malami^a

^aNikhef, Science Park 105, NL-1098 XG Amsterdam, Netherlands

^bDepartment of Physics and Astronomy, Vrije Universiteit Amsterdam, NL-1081 HV Amsterdam, Netherlands

Do Minimal Parity Solutions to the Strong CP Problem Work?

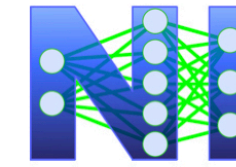
Jordy de Vries,^{1,2,*} Patrick Draper,^{3,†} and Hiren H. Patel^{4,‡}

¹Institute for Theoretical Physics Amsterdam and Delta Institute for Theoretical Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands

²Nikhef, Theory Group, Science Park 105, 1098 XG, Amsterdam, The Netherlands

³Department of Physics, University of Illinois, Urbana, IL 61801

⁴Department of Physics and Santa Cruz Institute for Particle Physics, University of California, Santa Cruz, CA 95064, USA



A massive variable flavour number scheme for the Drell-Yan process

R. Gauld^{1,*}

¹Nikhef, Science Park 105, NL-1098 XG Amsterdam, The Netherlands

(Dated: 6th July 2021)

The Path to Proton Structure at One-Percent Accuracy

The NNPDF Collaboration:

Richard D. Ball,¹ Stefano Carrazza,² Juan Cruz-Martinez,² Luigi Del Debbio,¹ Stefano Forte,² Tommaso Giani,^{1,8} Shayan Iranipour,³ Zahari Kassabov,³ Jose I. Latorre,^{4,5,6} Emanuele R. Nocera,^{1,8}

Rosalyn L. Pearson,¹ Juan Rojo,^{7,8} Roy Stegeman,² Christopher Schwan,² Maria Ubiali,³

Cameron Voisey,⁹ and Michael Wilson¹

Extending Precision Perturbative QCD with Track Functions

Yibei Li,^{1,*} Ian Mould,^{2,†} Solange Schrijnder van Velzen,^{3,4,‡} Wouter J. Waalewijn,^{3,4,§} and Hua Xing Zhu^{1,¶}

¹Zhejiang Institute of Modern Physics, Department of Physics, Zhejiang University, Hangzhou, 310027, China

²Department of Physics, Yale University, New Haven, CT 06511

³Nikhef, Theory Group, Science Park 105, 1098 XG, Amsterdam, The Netherlands

⁴Institute for Theoretical Physics Amsterdam and Delta Institute for Theoretical Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands

A different perspective on the vev insertion approximation for electroweak baryogenesis

Marieke Postma^a

^aNikhef, Theory Group, Science Park 105, 1098 XG, Amsterdam, The Netherlands

ENW-XL THEORY PROPOSAL

- Submitted a pre-application:
**A Roadmap to the Microscopic Universe:
Particle Physics Meets Gravity**
- Main applicant: Elisabetta Pallante
- Consortium of 10 theorists
- RUG+RU+UvA+VU+Nikhef

[Members of the theory group participate also in other ENW-XL pre-applications]

Part A - Applicants

A.1 Main applicant

prof. dr. E. (Elisabetta) Pallante
University of Groningen, Van Swinderen Institute for Particle Physics and Gravity

A.2 Co-applicant(s)

prof. dr. W. (Wim) Beenakker
Radboud University Nijmegen, Institute of Mathematics, Astrophysics and Particle Physics

prof. dr. E. (Eric) Bergshoeff
University of Groningen, Van Swinderen Institute for Particle Physics and Gravity

prof. dr. D. (Daniel) Boer
University of Groningen, Van Swinderen Institute for Particle Physics and Gravity

prof. dr. R. (Robert) Fleischer
Nikhef, Theory Group and VU Amsterdam, Department of Physics and Astronomy

prof. dr. E. (Eric) Laenen
University of Amsterdam, Nikhef and Utrecht University, Institutes for Theoretical Physics

prof. dr. R. (Renate) Loll
Radboud University Nijmegen, Institute of Mathematics, Astrophysics and Particle Physics

prof. dr. A. (Anupam) Mazumdar
University of Groningen, Van Swinderen Institute for Particle Physics and Gravity

dr. F. (Frank) Saueressig
Radboud University Nijmegen, Institute of Mathematics, Astrophysics and Particle Physics

dr. W. J. (Wouter) Waalewijn
University of Amsterdam, Institute of Physics

Stay tuned ...

