# Sixth Conference of Nordic Network for Diversity in Physics

# Report of Contributions

https://indico.cern.ch/e/norndip24

Contribution ID: **1** Type: **not specified**

# Registration

*Tuesday, 7 May 2024 12:00 (30 minutes)*

Contribution ID: **2** Type: **not specified**

# Welcome

*Tuesday, 7 May 2024 12:30 (30 minutes)*

**Presenter:** MÜLLER LYSEBO, Elisabeth

Contribution ID: **3** Type: **not specified**

# Keynote talk: Counting and context: Gender, physics, and methods in tension

*Tuesday, 7 May 2024 13:00 (45 minutes)*

**Presenter:** LORELEI TRAXLER, Adrienne (University of Copenhagen)

Contribution ID: **4** Type: **not specified**

# Tackling the chemical complexity of atmospheric particle formation by molecular level models

*Tuesday, 7 May 2024 13:45 (30 minutes)*

Roughly half of the atmospheric particles originate gas-to-new-particle conversion which was first observed in the1990s. However, the molecular mechanisms of formation of the initial molecular clusters and their growth to atmospheric aerosol particles in the diverse atmospheric conditions are not yet understood. Our cluster population dynamics model (ACDC, first published in 2012) combined with high-level quantum chemical data can fairly accurately predict new particle formation rates for any single combination of clustering molecules. The sheer number of potential - predominantly organic - chemical species, processes and cluster structures makes a brute-force application of such a model impossible for most conditions in the real atmosphere. The low concentrations of the individual particle-forming vapours and their precursors, furthermore, pose challenges to their experimental identification. We have set out to tackle these issues by developing tailor made machine learning techniques to model atmospheric particle formation, and also support the analysis of experimental data

**Presenter:** VEHKAMÄKI, Hanna (University of Helsinki)

Contribution ID: **5** Type: **not specified**

# Entropy Production in Non-equilibrium Systems

*Tuesday, 7 May 2024 14:15 (30 minutes)*

**Presenter:** KRISHNAMURTHY, Supriya (Stockholm University)

Contribution ID: **6** Type: **not specified**

# Coffee

*Tuesday, 7 May 2024 15:15 (30 minutes)*

Contribution ID: **7** Type: **not specified**

# Microaggressions in academic institutions

*Tuesday, 7 May 2024 15:45 (30 minutes)*

**Presenter:** GRESSGÅRD, Randi

Contribution ID: **8** Type: **not specified**

# Discussions in groups

*Tuesday, 7 May 2024 16:15 (1 hour)*

Contribution ID: **9** Type: **not specified**

# Radar observations of the dayside aurora

*Tuesday, 7 May 2024 17:15 (15 minutes)*

**Presenter:** FRØYSTEIN, Ingeborg

Contribution ID: **10** Type: **not specified**

# Characterizing the complex chemistry of exoplanet atmospheres with virtual laboratories and space telescopes

*Wednesday, 8 May 2024 09:00 (45 minutes)*

Extrasolar planets are very diverse, ranging from rocky planets to ultra-hot gaseous giants. Ideally, one would like to use global parameters like orbital distance, planetary mass and the host star's effective temperature to characterize the planet as well as its atmospheric regimes remotely. Ultra-hot gas giants, however, defy this aim since their atmosphere exhibit a wide range of chemical conditions: The day side is sufficiently ionized to suggest a stratified magnetic coupling and the night side is so cold that clouds form. Warm, hot and ultra-hot gaseous exoplanets are the easiest to observe and therefore allow to characterize their complex chemistry and atmospheric regimes. Space missions like HST, CHEOPS, JWST, in the future also PLATO and Ariel enable unprecedented insight, for example: CHEOPS phase curves point to the presence of of atmospheric magnetic fields in
exoplanets, JWST provides the first proof of cloud particles in exoplanet atmospheres and the discovery of new gas-phase species like SO2 in combination with CH4 and H2O.

In this talk, I will demonstrate how virtual laboratories that combine detailed physical models are the base for interpreting observational findings, for putting them into a physical context. The focus of the talk will be our recent advances in cloud formation modelling combined with extensive studies of metal-oxide cluster formation, photo-chemical processes, and complex 3D atmosphere simulations.

**Presenter:** Prof. HELLING, Christiane (Space Research Institute, Austrian Academy of Sciences)

Contribution ID: **11** Type: **not specified**

# Observing space - How to study our home in the solar system

*Wednesday, 8 May 2024 09:45 (30 minutes)*

**Presenter:** REXER, Theresa

Contribution ID: **12** Type: **not specified**

# Searching for the known unknowns: Lightening up the dusty universe

*Wednesday, 8 May 2024 10:15 (30 minutes)*

I will talk about how I use astrophysical transients to address fundamental questions about the Universe we live in. Astrophysical transients —stars exploding as supernovae —are the spotlights of the Universe, which are, however, dimmed by 'cosmic dust', i.e., small solid particles of unknown origin. Recent measurements of the expansion rate of the Universe, using supernovae as distance indicators, are in disagreement with early Universe measurements. Some questions which shall be addressed are: Are supernovae the long sought production factories of large cosmic dust grains? And, is cosmic dust a driver of the expansion rate discrepancy? I will talk about how new methods and upcoming transient surveys may help find answers to these questions.

**Presenter:** GALL, Christa

Contribution ID: **13** Type: **not specified**

# Coffee

*Wednesday, 8 May 2024 10:45 (30 minutes)*

Contribution ID: **14** Type: **not specified**

# Good and bad news from the Finnish EDI landscape in physics

*Wednesday, 8 May 2024 11:15 (30 minutes)*

**Presenter:** LAURI, Katja (University of Helsinki)

Contribution ID: **15** Type: **not specified**

# Academic Housework

*Wednesday, 8 May 2024 11:45 (30 minutes)*

**Presenter:** HEIJSTRA, Thamar Melanie

Contribution ID: **16** Type: **not specified**

# Lunch

*Wednesday, 8 May 2024 12:15 (1 hour)*

Contribution ID: **17** Type: **not specified**

# Transformative resistance and renewal –how to engender a culture of inclusion and equality in academia

*Wednesday, 8 May 2024 13:15 (30 minutes)*

**Presenter:** ØYSLEBØ SØRENSEN, Siri

Contribution ID: **18** Type: **not specified**

# Genie a project at Chalmers

*Wednesday, 8 May 2024 13:45 (30 minutes)*

**Presenter:** SALINE, Maria (Charmers Technical University)

Contribution ID: **19** Type: **not specified**

# Panel Discussion

*Wednesday, 8 May 2024 14:15 (30 minutes)*

Contribution ID: **20** Type: **not specified**

# Summary

*Wednesday, 8 May 2024 14:45 (15 minutes)*

Contribution ID: **21** Type: **not specified**

# The root of the problem and one possible solution

*Tuesday, 7 May 2024 14:45 (15 minutes)*

**Presenter:** KRISTJÁNSDÓTTIR, Nanna

Contribution ID: **22** Type: **not specified**

# The Increasing Importance of Female Astronauts to Space Exploration

*Tuesday, 7 May 2024 15:00 (15 minutes)*

**Presenter:** NORBERG, Carol

Contribution ID: **23** Type: **not specified**

# Investigating nuclear shape transitions through lifetime measurements

*Tuesday, 7 May 2024 17:30 (15 minutes)*

**Presenter:** SØRBY HEINES, Johannes

Contribution ID: **24** Type: **not specified**

# Textile chemiresistor for gas sensing

*Tuesday, 7 May 2024 17:45 (15 minutes)*

**Presenter:** CASALINUOVO, Silvia