

**Bridging scales: At the
crossroads among
renormalisation group,
multi-scale modelling, and
deep learning**

Report of Contributions

Contribution ID: 1

Type: **not specified**

Registration

Monday, 15 April 2024 08:30 (1 hour)

Contribution ID: 6

Type: **not specified**

ML and differentiable programming optimization for X-ray experiments

Monday, 15 April 2024 15:00 (30 minutes)

Presenter: NAPOLITANO, Fabrizio (INFN - Laboratori Nazionali di Frascati, Italy)

Contribution ID: 7

Type: **not specified**

From atoms to devices: Designing materials for future devices

Monday, 15 April 2024 16:00 (50 minutes)

Presenter: NEOGI, Sanghamitra (University of Colorado Boulder)

Contribution ID: 8

Type: **not specified**

Fundamental limits of Shallow Neural Networks for Supervised Learning

Tuesday, 16 April 2024 09:00 (50 minutes)

Presenter: BARBIER, Jean (ICTP)

Contribution ID: 9

Type: **not specified**

Modelling complex data with RBMs

Tuesday, 16 April 2024 09:50 (50 minutes)

Presenter: SEOANE BARTOLOME, Beatriz (LISN, Paris-Saclay)

Contribution ID: **10**

Type: **not specified**

Renormalizing Molecular Dynamics

Tuesday, 16 April 2024 11:30 (50 minutes)

Presenter: FACCIONI, Pietro (University of Milan-Bicocca)

Contribution ID: 11

Type: **not specified**

Natural swarms in 3.99 dimensions

Tuesday, 16 April 2024 14:30 (30 minutes)

Presenter: SCANDOLO, Mattia (ISC-CNR)

Contribution ID: 12

Type: **not specified**

A quantum machine learning perspective on phase transitions

Tuesday, 16 April 2024 15:00 (30 minutes)

Presenter: KISS, Oriel (CERN)

Contribution ID: 13

Type: **not specified**

Operator Leaning Renormalization Group for Quantum Simulations

Tuesday, 16 April 2024 16:00 (50 minutes)

Presenter: LUO, Di (Massachusetts Institute of Technology)

Contribution ID: 14

Type: **not specified**

Machine learning in biomolecular simulations: from characterizing conformational free energy landscapes to scale bridging

Wednesday, 17 April 2024 09:00 (50 minutes)

Presenter: PETER, Christine (University of Konstanz)

Contribution ID: 15

Type: **not specified**

What do Transformers learn when trained via Masked Language Modelling?

Wednesday, 17 April 2024 09:50 (50 minutes)

Presenter: GERACE, Federica

Contribution ID: 16

Type: **not specified**

Inferring phase transitions and critical exponents from limited observations with Thermodynamic Maps

Wednesday, 17 April 2024 11:30 (50 minutes)

Presenter: TIWARY, Pratyush (University of Maryland, College Park)

Contribution ID: 18

Type: **not specified**

Loss is more: exploring the weight space of a perceptron via enhanced sampling techniques

Wednesday, 17 April 2024 15:00 (30 minutes)

Presenter: MELE, Margherita (University of Trento)

Contribution ID: 19

Type: **not specified**

Diffusion Model as Stochastic Quantization in Lattice QFT

Wednesday, 17 April 2024 16:00 (50 minutes)

Presenter: ZHOU, Kai (Frankfurt Institute for Advanced Studies)

Contribution ID: 20

Type: **not specified**

A computation-dissipation tradeoff for machine learning at the mesoscale

Thursday, 18 April 2024 09:00 (50 minutes)

Presenter: INGROSSO, Alessandro (The Abdus Salam International Centre for Theoretical Physics)

Contribution ID: 21

Type: **not specified**

Exploring the landscape of model representations

Thursday, 18 April 2024 09:50 (50 minutes)

Presenter: NOID, Will (penn state)

Contribution ID: 22

Type: **not specified**

Neural Quantum States for Quantum Many-Body Physics

Thursday, 18 April 2024 11:30 (50 minutes)

Presenter: RIOS HUGUET, Arnau (Institute of Cosmos Sciences, University of Barcelona, Spain)

Contribution ID: 23

Type: **not specified**

Thrustworthy machine learning for materials

Thursday, 18 April 2024 14:30 (30 minutes)

Presenter: GRASSELLI, Federico (EPFL)

Contribution ID: 24

Type: **not specified**

Tracking and Analysis of Active Droplet Dynamics

Thursday, 18 April 2024 15:00 (30 minutes)

Presenter: SCANDOLA, Matteo (University of Trento)

Contribution ID: 25

Type: **not specified**

Transferable coarse-grained models accelerate chemical-space exploration

Thursday, 18 April 2024 16:00 (50 minutes)

Presenter: BERAU, Tristan (Heidelberg University)

Contribution ID: 26

Type: **not specified**

Fixed point actions from lattice gauge equivariant convolutional neural networks

Friday, 19 April 2024 09:00 (50 minutes)

Presenter: IPP, Andreas (TU Wien)

Contribution ID: 27

Type: **not specified**

Towards multi-scale models of active filaments

Friday, 19 April 2024 09:50 (50 minutes)

Presenter: LOCATELLI, Emanuele (University of Padova)

Contribution ID: 28

Type: **not specified**

An integrated photonic neuromorphic interface for dimensionality expansion of optical signals

Friday, 19 April 2024 11:30 (50 minutes)

Presenter: LUGNAN, Alessio (University of Trento)

Contribution ID: 29

Type: **not specified**

Welcome

Monday, 15 April 2024 09:30 (20 minutes)

Contribution ID: **30**

Type: **not specified**

Topological polymeric soft materials: Some examples

Monday, 15 April 2024 09:50 (50 minutes)

Presenter: TUBIANA, Luca (University of Trento, Italy)

Contribution ID: 31

Type: **not specified**

Coupling DFT, SSCHA and SchNet NN for Hydrogen desorption temperature calculations in Magnesium Hydride Nanoclusters

Monday, 15 April 2024 14:30 (30 minutes)

Presenter: PEDRIELLI, Andrea (FBK)

Contribution ID: 32

Type: **not specified**

Renormalisation group techniques for polymers on fractal lattices

Monday, 15 April 2024 11:30 (50 minutes)

Presenter: TROVATO, Antonio (University of Padova - Department of Physics and Astronomy)

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TBA

Contribution ID: **33**

Type: **not specified**

TBA

Thursday, 18 April 2024 16:50 (30 minutes)

Presenter: MEURICE, Yannick (University of Iowa)