



# DAY 1

## Arrival

- 14:30 - 15:30 Registration
- 15:30 - 16:00 Welcome & Opening Remarks

Chair: **Jill Miwa**

- 16:00 - 16:45 Keynote: **Roman Fasel**- Nanographene-based designer quantum spin systems  
Highlight: **James McHugh** - Spin splitting and band-edge renormalisation in monolayer TMDs
- 16:45 - 17:05 Highlight: **Stefania Pagliara** - Tracking photoinduced dynamics in layered semi-conductors with ultrafast spectroscopies
- 17:05 - 17:25

- 19:00 - 20:30 **Dinner**

# DAY 2

7:00 - 9:00

## Breakfast

Chair: **Carsten Busse**

9:00 - 9:30

Invited: **Kristian Sommer Thygesen** - Building a digital infrastructure for 2D materials science

9:30 - 10:00

Invited: **Justin Wells** - Further enhancing the usually strong electron-phonon kinks in graphene and hBN

10:00 - 10:20

Contributed: **Miguel A. Valbuena** - Engineering a spin-orbit bandgap in graphene-tellurium-irridium heterostructures

10:20 - 10:40

Highlight: **Alberto Turoldo** - Interfacial oxidation enables charge-transfer contacts and degenerate n-doping in monolayer MoS<sub>2</sub>

10:40 - 11:10

## Coffee

Chair: **Carsten Busse**

11:10 - 11:40

Invited: **Antonija Grubišić-Čabo** - Preparation of large-area 2D materials using UHV-based KISS method

11:40 - 12:00

Contributed: **Catherine Grover** - Epitaxial growth of pristine 2D Ta-S-Se Janus membranes on Au(111)

12:00 - 12:20

Contributed: **Abdallah Karaka** - Co<sub>2</sub>S<sub>2</sub>: a new 2D material and its phase transitions

12:20 - 12:40

Contributed: **Matthias Batzill** - Mirror twin boundary phases in MoTe<sub>2</sub>

12:40 - 14:10

## Lunch

Chair: **Thomas Michely**

14:10 - 14:40

Invited: **Niklas Witt** - Dirac meets flat band: real-space switching of local moments driven by quantum geometry in correlated graphene heterostructures

14:40 - 15:00

Contributed: **Guangyao Miao** - Doping monolayer graphene to the Van Hove singularity

15:00 - 15:20

Contributed: **Affan Safeer** - Small polarons in single layer MnBr<sub>2</sub>: substrate dependence and interaction with a super-moiré

15:20 - 15:40

Contributed: **Anshika Mishra** - Manipulation of polarons in monolayer NiBr<sub>2</sub>

15:40 - 16:10

## Coffee

Chair: **Thomas Michely**

16:10 - 16:40

Invited: **Peter Liljeroth** - Magnetic excitations in van der Waals quantum materials at the atomic scale

16:40 - 17:00

Contributed: **Dominik Legut** - Perpendicular magnetic anisotropy in a single Dy adatom ferrimagnet

17:00 - 17:20

Contributed: **Woultier Joulie** - Atomic manipulation on epitaxial 2D materials

17:20 - 17:40

Contributed: **Sandra Sajan** - Atomic-scale mapping of superconductivity in the incoherent CDW mosaic phase of a transition metal dichalcogenide

19:00 - 20:30

## Dinner

20:30 - 22:00

Poster Session

# DAY 3

7:00 - 9:00

## Breakfast

Chair: **Matthias Batzill**

9:00 - 9:30

Invited: **Jeison Fischer** - Epitaxial growth pathways to magnetic order in novel 2D materials

9:30 - 9:50

Contributed: **David Serrate** - Atomic scale demonstration of ferromagnetism in a single layer FeCl<sub>2</sub> on Au(111)

9:50 - 10:20

Invited: **Marin Petrović** - Beyond pristine monolayer borophene: towards functionalization and bilayers

10:20 - 10:40

Contributed: **Patrick Seleš** - Fast synthesis of large hBN domains on commercial nickel foils by UHV-CVD

10:40 - 11:00

Contributed: **Marjolaine Cornu** - Heteroepitaxial growth of 2D BN films on Ni(111) by CVD with controlled thicknesses

11:00 - 11:30

## Coffee

Chair: **Matthias Batzill**

11:30 - 12:00

Invited: **Irene Groot** - Growth of two-dimensional materials on liquid metal catalysts

12:00 - 12:20

Highlight: **Lars Mohrhusen** - TiS<sub>2</sub>-based 2D nanocatalysts under reactive conditions

12:20 - 12:40

Contributed: **Thais Chagas** - Electronic structure and edge states in the 2D kagome Ta<sub>2</sub>S<sub>3</sub> on Au(111)

12:40 - 12:55

## Conference Photo

12:55 - 14:10

## Lunch

14:10 - 19:00

## Excursion



19:00 - 20:30

## Dinner

20:30 - 22:00

Poster Session

# DAY 4

7:00 - 9:00

## Breakfast

Chair: **Oliver Gröning**

9:00 - 9:45

Keynote: **Roser Valentí** - Emergent correlations and topology in van der Waals heterostructures

9:45 - 10:05

10:05 - 10:25

Highlight: **Maarten Goesten** - Quasiatomic pore bands

Contributed: **Benjiman Lowe** - Strong electron correlations in 2D kagome metal-organic frameworks

10:25 - 10:45

Contributed: **J. Aaron Mendoza Rodarte** - Gold-Assisted Exfoliation of 2D Materials for Vacuum-Compatible Spectroscopy

10:45 - 11:15

## Coffee

Chair: **Oliver Gröning**

11:15 - 11:35

Contributed: **Dina Wilks** - Electronic structure of multiferroic SnSe from monolayer to bulk

11:35 - 11:55

Contributed: **Ezequiel Tosi** - Thermally driven  $\alpha$ - $\beta$  phase transition and alloy formation in SnSe/Au(111)

11:55 - 12:15

Company: **Saumya Mukherjee (SPECS)** - Multifunctional momentum microscope for 2D material research

12:15 - 12:35

Company: **Vasileios Theofylaktopoulos (Heidelberg Instruments)** - Strain it, sculpt it, cut it: thermal scanning probe lithography in 2D materials research

12:35 - 14:05

## Lunch

Chair: **Yuriy Dedkov**

14:05 - 14:35

Invited: **Elton J. G. Santos** - Exploring the limits of ultrafast magnetism in van der Waals magnets

14:35 - 15:05

Invited: **Hélène Seiler** - Probing electronic disorder in nanomaterials with coherent two-dimensional spectroscopy

15:05 - 15:25

Contributed: **Šimun Mandić** - Charge and resonant energy transfer in hybrid organic-TMDs heterostructures

15:25 - 15:55

## Coffee

Chair: **Yuriy Dedkov**

15:55 - 16:25

Invited: **Amilcar Bedoya-Pinto** - Recent developments in epitaxially grown 2D magnets: from 2D-XY systems to high-T<sub>c</sub> magnets driven by self-intercalation

16:25 - 17:45

Contributed: **Antti Karjasita** - Evidence of multiferrocity in monolayer NiBr<sub>2</sub>

17:45 - 18:05

Contributed: **Xue Li** - Ferroelectric domain boundaries as internal quantum wells in van der Waals TMDs



19:30 - 22:00

## Conference Dinner

