

# Quantum materials, novel phases of matter and transport phenomena

University of Salerno -21 June 2024

*The workshop is organized within the bilateral Italy – Korea project MAP. Its purpose is to bring together project members along with leading scientists in the field of quantum materials, novel phases of matter and transport phenomena in normal conditions, or under strain and doping.*

## *Invited Speakers*

|                               |  |
|-------------------------------|--|
| <b>Izabella Bialo</b>         | University of Zurich, Switzerland            |
| <b>Bernd Büchner</b>          | IFW Dresden, Germany                         |
| <b>Roberta Citro</b>          | University of Salerno, Italy                 |
| <b>Mario Cuoco</b>            | CNR-SPIN, Salerno                            |
| <b>Philip Hofmann</b>         | Aarhus University, Denmark                   |
| <b>Yeongkwang Kim</b>         | KAIST, Republic of Korea                     |
| <b>Albert Liu</b>             | Brookhaven National Laboratory, USA          |
| <b>Fabio Miletto Granozio</b> | CNR-SPIN Naples, Italy                       |
| <b>Carmine Ortix</b>          | University of Salerno, Italy                 |
| <b>Peter Wahl</b>             | University of St Andrews, UK                 |
| <b>Dirk Wulferding</b>        | Seoul National University, Republic of Korea |

## **Workshop Chairs**

Rosalba Fittipaldi (Chair)

Maria Teresa Mercaldo (Co-chair)

### **Scientific Committee**

Mario Cuoco  
Changyoung Kim  
Antonio Vecchione

### **Organizing Committee**

Filomena Forte  
Francesco Gabriele  
Anita Guarino  
Mariateresa Lettieri

### **Technical Support**

Bernardo Amoruso  
Carmen D'Apolito  
Vincenzo Di Marino  
Antonia Loffredo  
Rosalia Sacco

# International Workshop - MAP project

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### Program

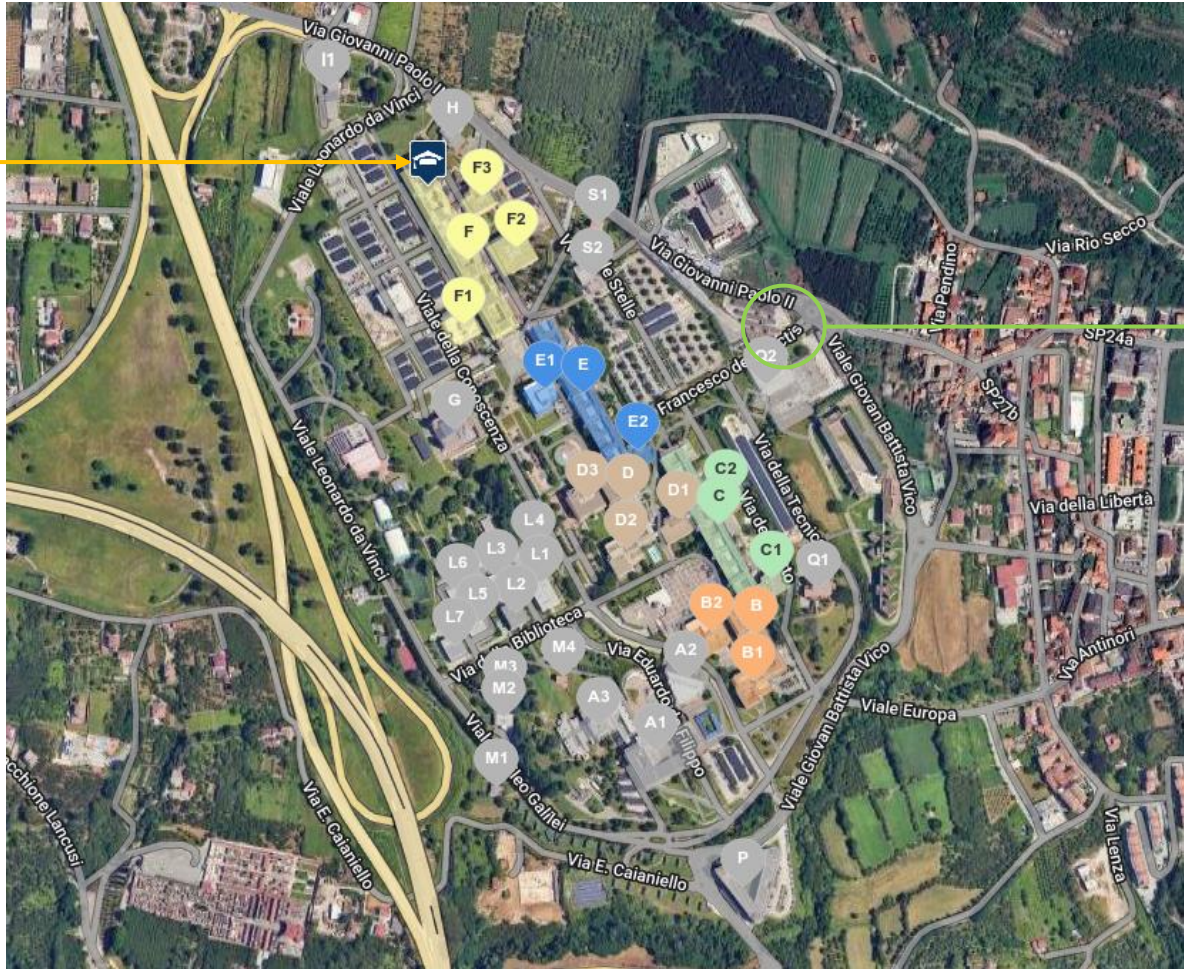
|               |                               |  |
|---------------|-------------------------------|--|
| 09:00         |                               | Arrival and registration   |
| 09:20 - 09:30 |                               | <i>Opening</i>   |
|               |                               | <i>Session Chair: Rosalba Fittipaldi</i>   |
| 09:30 - 10:00 | <b>Bernd Büchner</b>          | Evidence for superconducting topological surface states in PtBi <sub>2</sub>                                       |
| 10:00 - 10:30 | <b>Philip Hofmann</b>         | Ultrafast carrier dynamics throughout the three-dimensional Brillouin zone of the Weyl semimetal PtBi <sub>2</sub> |
| 10:30 - 11:00 |                               | <i>Coffee break</i>  |
|               |                               | <i>Session Chair: Changyoung Kim</i>   |
| 11:00 - 11:30 | <b>Albert Liu</b>             | 2-D Terahertz Spectroscopy of Cuprate Superconductors  |
| 11:30 - 12:00 | <b>Roberta Citro</b>          | A novel platform for topological superconductivity and spin-orbitronics at oxides interfaces                       |
| 12:00 - 12:30 | <b>Fabio Miletto Granozio</b> | Freestanding oxide heterostructure membranes hosting a 2-dimensional electron gas                                  |
|               |                               | <i>Lunch break</i>   |
|               |                               | <i>Session Chair: Maria Teresa Mercaldo</i>  |
| 14:00 - 14:30 | <b>Yeongkwang Kim</b>         | Correlated and topological surface states formed at the edge of electricle   |
| 14:30 - 15:00 | <b>Izabella Biato</b>         | Strain-Tuned Magnetic Frustration in La <sub>2</sub> NiO <sub>4</sub>  |
| 15:00 - 15:30 | <b>Carmine Ortix</b>          | A tunable room-temperature nonlinear Hall effect in elemental bismuth thin films                                   |
|               |                               | <i>Coffee break</i>  |
|               |                               | <i>Session Chair: Antonio Vecchione</i>  |
| 16:00 - 16:30 | <b>Peter Wahl</b>             | Atomic-scale imaging of structure-property relationships in strontium ruthenates                                   |
| 16:30 - 17:00 | <b>Dirk Wulferding</b>        | Effect of orbital doping on magnetism in Ca <sub>2</sub> (Ru,Mn)O <sub>4</sub>                                     |
| 17:00 - 17:30 | <b>Mario Cuoco</b>            | Signatures of a spin-orbital chiral metal  |
|               |                               | <i>Closing</i>   |
| 19:00         |                               | <b>Social dinner</b>   |



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**Venue: Dipartimento di Fisica, Università di Salerno,  
Via Giovanni Paolo II, 132, FISCIANO (SA)**



Campus Map

