

Intercontinental binodal Workshop Flat bands and high-order Van Hove singularities

Dates: May 27 - June 7, 2024

Location: Max Planck Institute for the Physics of Complex Systems (Dresden, Germany)

Location: IBS Center for Theoretical Physics of Complex Systems (Daejeon, Korea)

Scientific Coordinators (Dresden node): Claudio Chamon, Laura Classen, Joseph Betouras

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Overview:

Band engineering effectively increasing interaction effects holds the promise for a better understanding and eventual control over quantum many-body states of matter. This can be achieved in various ways, e.g., by globally reducing the bandwidth, by locally inducing high-order Van Hove points, or by designing lattice geometries which yield flat bands.

The event will be held in a novel format, with participants attending from two nodes, one in Europe (Dresden, Germany) and one in Asia (Daejeon, Korea). Part of the program will run in hybrid mode such that the talks can be attended from both nodes at the same time.

Topics include:

- Van-Hove-like singularities
- Lifshitz transition
- Flat bands
- Symmetry and Topology
- Quantum geometry
- Fractional Chern insulators
- Fractional topological insulators
- Strongly correlated materials
- Cuprates
- Ruthenates
- Vanadates
- Moiré materials
- Graphene
- Electronic instabilities
- Many-body physics

For workshop participation, please complete the [application form](#) by March 31, 2024.