



# Emergent spacetime geometry – from quantum simulation to cosmology

## Monday 19 February 2024

### Presentations (09:00 - 11:40)

time	[id] title	presenter
09:00	[1] Experiments for rotational superradiance in a polaritonic fluid of light	JACQUET, Maxime
09:40	[2] Curved and Expanding Spacetimes studied with a Quantum Field Simulator	SPARN, Marius
10:20	[9] Verification of the area law of mutual information in a one-dimensional cold atomic quantum simulator	TAJIK, Mohammadamin

### Presentations (11:50 - 12:30)

time	[id] title	presenter
11:50	[4] Casimir cosmology	LEONHARD, Ulf

### Presentations (14:00 - 14:40)

time	[id] title	presenter
14:00	[5] Rotating Curved Spacetime Signatures from a Giant Quantum Vortex	SVANCARA, Patrik

# Tuesday 20 February 2024

## Presentations (09:00 - 11:00)

time	[id] title	presenter
09:00	[6] Quantum critical Eliashberg theory, the SYK superconductor and their holographic duals	SCHMALIAN, Jörg
09:40	[7] Stationary spontaneous Hawking radiation and beyond: Observing the time evolution of an analogue black hole	MUÑOZ DE NOVA, Juan Ramón
10:20	[8] Geometrical Manifestation of Gravity	HEISENBERG, Lavinia

## Presentations (11:50 - 12:30)

time	[id] title	presenter
11:50	[3] QFT simulators in and beyond the linear regime	ERNE, Sebastian

## Presentations (14:00 - 15:20)

time	[id] title	presenter
14:00	[10] A new platform for dipolar quantum gases of magnetic atoms in quasi two dimensions	CHOMAZ, Lauriane
14:40	[11] Quantum Simulators for Gravity and Cosmology	SCHÜTZHOLD, Ralf

## Presentations (16:30 - 18:30)

time	[id] title	presenter
16:30	[12] Bernal Bilayer graphene: a tunable Dirac material	WEITZ, Thomas
17:10	[13] Analog of cosmological particle production in moiré Dirac materials	TOLOSA SIMEÓN, Mireia
17:50	[14] Scattering Analogy of Cosmological Particle Production in a Quantum Simulator	SCHMIDT, Christian

# Wednesday 21 February 2024

## **Presentations (09:00 - 11:00)**

time	[id] title	presenter
09:00	[15] Evolution and manipulation of light in photonic mesh lattices	PESCHEL, Ulf
09:40	[16] Black hole mirages in Weyl semimetals	HALLER, Andreas
10:20	[17] Entangled Universe	TETRADIS, Nikolaos

## **Presentations (11:50 - 12:30)**

time	[id] title	presenter
11:50	[18] tba	WEINFURTNER, Silke