

**Symposium on Quantum
Technologies for Fundamental
Physics: Quantum simulators
in HEP**

Report of Contributions

Contribution ID: 1

Type: **not specified**

Opening welcome

Monday, 27 October 2025 09:30 (30 minutes)

Presenter: MNICH, Joachim Josef (CERN)

Contribution ID: 2

Type: **not specified**

Lessons from condensed matter and quantum chemistry; quantum information synergies in fundamental physics

Monday, 27 October 2025 10:00 (45 minutes)

Presenter: Prof. CIRAC, Ignacio (Max-Planck Inst.)

Contribution ID: 3

Type: **not specified**

Aspects of lattice field theory: Building a community

Monday, 27 October 2025 10:45 (45 minutes)

Presenter: JANSEN, Karl

Contribution ID: 4

Type: **not specified**

Perspectives on quantum simulations and sensing for HEP

Monday, 27 October 2025 12:00 (45 minutes)

Presenters: Dr FROMONTEIL, Charles (UIBK); Prof. ZACHE, Torsten (UIBK)

Contribution ID: 5

Type: **not specified**

Quantum gravity simulations and the interplay between holography and QI

Monday, 27 October 2025 12:45 (45 minutes)

Presenter: HANADA, Masanori (Queen Mary University of London)

Contribution ID: 6

Type: **not specified**

Impact of errors and decoherence on quantum devices.

Monday, 27 October 2025 15:00 (45 minutes)

Presenter: Prof. TRIVEDI, Rahul (Max-Planck)

Contribution ID: 7

Type: **not specified**

Rydberg atom implementations

Tuesday, 28 October 2025 10:00 (45 minutes)

Presenter: Prof. BROWAEYS, Antoine (Institut Optique)

Contribution ID: 8

Type: **not specified**

Qudit-based quantum platforms and advances in trapped ions

Tuesday, 28 October 2025 10:45 (45 minutes)

Presenter: Prof. RINGBAUER, Martin (UIBK)

Contribution ID: 9

Type: **not specified**

Quantum (sensing) infrastructure at CERN

Tuesday, 28 October 2025 12:15 (45 minutes)

Presenter: DOSER, Michael (Massachusetts Inst. of Technology (US))

Contribution ID: **10**

Type: **not specified**

Quantum simulators for HEP

Tuesday, 28 October 2025 13:00 (30 minutes)

Presenter: MURGUI GALVEZ, Clara (CERN)

Contribution ID: 11

Type: **not specified**

Group Discussion: Identification of 2–3 key theoretical questions

Monday, 27 October 2025 15:45 (45 minutes)

Contribution ID: 12

Type: **not specified**

Group Discussion: Platforms, methodologies, and potential collaborations. The role of CERN

Tuesday, 28 October 2025 15:00 (45 minutes)

Contribution ID: 13

Type: **not specified**

The CERN Quantum Technology Initiative

Tuesday, 28 October 2025 12:00 (15 minutes)

Presenter: Dr VALLECORSA, Sofia (CERN)