

QuantEEM Interdisciplinary Winter School

Agenda

February 1-3, 2023
Université de Bourgogne
Campus Montmuzard, Mirande Building
Room D115

Wednesday 01/02/2023

9:00 – 9:15 Welcome, presentation of the agenda
Stéphane Guérin, QuantEEM project coordinator

9:15 – 10:30 Introductory lecture, state of the art
Olivier Hess, ATOS Quantum Computing leader, videoconference

10:30 – 10:45 **Coffee break**

10:45 – 12:00 Quantum computing and algorithms for defense and critical systems applications
Frédéric Barbaresco, THALES, videoconference

12:00 – 14:00 **Lunch**

14:00 – 15:55 Quantum computing applied to the electronic structure problem, QPE and VQE algorithms
Bruno Senjean, Institut Charles Gerhardt, University of Montpellier

15:55 – 16:05 **Coffee break**

16:05 – 18:00 Implementing together a Variational Quantum Algorithm
Hamza Jaffali, ColibrITD, videoconference

Thursday 02/02/2023

9:00 – 9:15 Welcome, presentation of the agenda
Stéphane Guérin, QuantEEM project coordinator

9:15 – 10:30 Laser noise, industrial applications
Nicolas Volet, Department of Engineering, Aarhus University

10:30 – 10:45 Coffee break

10:45 – 12:00 Algorithmic needs in radar applications

Rami Kassab, THALES, videoconference

12:00 – 14:00 Lunch

14:00 – 15:50 Quantum effects in chemistry

Fabien Gatti, Institut des Sciences Moléculaires d'Orsay, University Paris-Sud

15:50 – 16:00 Coffee break

16:00 – 17:00 Quantum sensors and the elephants

Dmitry Budker, Helmholtz Institute, Johannes Gutenberg University, Mainz,
videoconference

Friday 03/02/2023

9:00 – 9:15 Welcome, presentation of the agenda

Stéphane Guérin, QuanTEEM project coordinator

9:15 – 10:30 Illustrating Quantum Optics concepts with the Quantenkoffer

Björn Habrich, QuTools GmbH

10:30 – 10:45 Coffee break

10:45 – 12:00 Illustrating Quantum Optics concepts with the Quantenkoffer

Björn Habrich, QuTools GmbH

12:00 – 14:00 Lunch

14:00 – 15:55 Quantum Fourier Transformation and its applications

Felix Givois & Valeria Bartsch - Fraunhofer ITWM, Kaiserslautern, videoconference

15:55 – 16:05 Coffee break

16:05 – 18:00 Shortcuts to adiabaticity for quantum control and quantum computing

Xi Chen, QuInST Research group, University of the Basque Country, videoconference

