



# Open Quantum Systems:

## From atomic nuclei to ultracold atoms and quantum optics

30 September 2019 - 4 October 2019

ECT\* - Villa Tambosi | Trento (Italy)

### Timetable

Mon 30/9

#### Registration

08:30 - 09:00

Meeting room, ECT\* - Villa Tambosi

#### Introduction

09:00 - 09:30

Meeting room, ECT\* - Villa Tambosi

*Prof. Achim Richter*

#### Giant Resonances in Highly Excited Nuclei - Prime Examples for Various Decay Modes of Open Quantum Systems

09:30 - 10:20

Meeting room, ECT\* - Villa Tambosi

#### Coffee break

10:20 - 10:50

Meeting room, ECT\* - Villa Tambosi

*Prof. Selim Jochim*

#### Juggling with single atoms to understand many body systems

10:50 - 11:40

Meeting room, ECT\* - Villa Tambosi

#### Lunch

11:40 - 14:00

Meeting room, ECT\* - Villa Tambosi

*Dr Kyle Brown*

#### Changing decay mode with excitation energy for two-proton decay

14:00 - 14:50

Meeting room, ECT\* - Villa Tambosi

#### Coffee break

14:50 - 15:20

Meeting room, ECT\* - Villa Tambosi

*Prof. Alexander Volya*

#### Coherent and chaotic dynamics of open quantum systems

15:20 - 16:10

Meeting room, ECT\* - Villa Tambosi

*Prof. Gerard McCaul*

#### Influence functional approaches to quantum and classical open systems

16:10 - 17:00

Meeting room, ECT\* - Villa Tambosi



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Tue 1/10

*Prof. Joachim Ankerhold*

## **Superconducting circuits as testbeds for atomic physics and quantum optics**

09:30 - 10:20

*Meeting room, ECT\* - Villa Tambosi*

## **Coffee break**

10:20 - 10:50

*Meeting room, ECT\* - Villa Tambosi*

*Dr Marek Płoszajczak*

## **Toward the understanding of near-threshold collectivity**

15:20 - 16:10

*Meeting room, ECT\* - Villa Tambosi*

## **Lunch**

11:40 - 14:00

*Meeting room, ECT\* - Villa Tambosi*

*Dr Giovanni Luca Guardo*

## **Nuclear Astrophysics experiment with Trojan Horse Method**

14:00 - 14:50

*Meeting room, ECT\* - Villa Tambosi*

## **Coffee break**

14:50 - 15:20

*Meeting room, ECT\* - Villa Tambosi*

*Dr Rimantas Lazauskas*

## **Description of few-nucleon systems by solving Faddeev-Yakubovsky equation**

15:20 - 16:10

*Meeting room, ECT\* - Villa Tambosi*

*Prof. Hans-Werner Hammer*

## **Open effective field theories and universalit**

16:10 - 17:00

*Meeting room, ECT\* - Villa Tambosi*



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Wed 2/10

*Dr Alejandro Kievsky*

**From correlations to universality**

09:30 - 10:20

*Meeting room, ECT\* - Villa Tambosi*

**Coffee break**

10:20 - 10:50

*Meeting room, ECT\* - Villa Tambosi*

*Dr. Maksim Kunitski*

**Small helium clusters studied by Coulomb explosion imaging** 10:50 - 11:40

*Meeting room, ECT\* - Villa Tambosi*

**Lunch**

11:40 - 14:00

*Meeting room, ECT\* - Villa Tambosi*

*Mrs Clara Wanjura*

**Topological framework for directional amplification in one-dimensional coupled cavity arrays**

14:00 - 14:50

*Meeting room, ECT\* - Villa Tambosi*

**Coffee break**

14:50 - 15:20

*Meeting room, ECT\* - Villa Tambosi*

*Dr Petr Navratil*

**Nuclear scattering and reactions from ab initio no-core shell model with continuum**

15:20 - 16:10

*Meeting room, ECT\* - Villa Tambosi*

*Prof. Francesco Pedrivera*

**Quantum computing of nuclear dynamics**

16:10 - 17:00

*Meeting room, ECT\* - Villa Tambosi*



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Thu 3/10

### Coffee break

10:20 - 10:50

Meeting room, ECT\* - Villa Tambosi

*Prof. Gerd Leuchs*

### A single atom and the radiation field of free space – an experimental study

10:50 - 11:40

Meeting room, ECT\* - Villa Tambosi

### Lunch

11:40 - 14:00

Meeting room, ECT\* - Villa Tambosi

*Dr Jaume Carbonell*

### Low energy $n$ scattering on light nuclei and $^{19}\text{B}$ as a $^{17}\text{B}$ - $n$ - $n$ three-body system close to unitary limit

14:00 - 14:50

Meeting room, ECT\* - Villa Tambosi

### Coffee break

14:50 - 15:20

Meeting room, ECT\* - Villa Tambosi

*Dr Kevin Fossez*

### Toward an in-medium effective field theory for the nuclear shell model

15:20 - 16:10

Meeting room, ECT\* - Villa Tambosi

*Prof. Pietro Faccioli*

### Mixed Quantum-Classical Nonrelativistic open quantum systems: a field theoretic approach

16:10 - 17:00

Meeting room, ECT\* - Villa Tambosi



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Fri 4/10

*Prof. Alexandre Matzkin*

**The Quantum Cheshire Cat effect: Can properties of quantum systems be delocalized?**

09:30 - 10:20

*Meeting room, ECT\* - Villa Tambosi*

**Coffee break**

10:20 - 10:50

*Meeting room, ECT\* - Villa Tambosi*

*Mr Jacob Leamer*

**Applying Open Quantum Systems Techniques to Density Matrix Minimization**

10:50 - 11:40

*Meeting room, ECT\* - Villa Tambosi*

**Lunch**

11:40 - 13:30

*Meeting room, ECT\* - Villa Tambosi*