

PHYS-802

Recent trends in Light-Matter Intercation (Summer School)

Savona Vincenzo

| Cursus | Sem. | Type |
|---------|------|------|
| Physics | | Obl. |

| | |
|----------------------------|-----------|
| Language of teaching | English |
| Credits | 2 |
| Session | |
| Exam | Multiple |
| Workload | 60h |
| Hours | 23 |
| Courses | 23 |
| Number of positions | 40 |

Frequency

Only this year

Remark

From 4th to 8th September 2017 at EPFL

Summary

The school includes pedagogical lectures on recent developments in quantum optics, ultra-cold atoms and many body physics by both theorists and experimentalists. Also 3 hrs of lectures on computational techniques like DMRG and Tensor networks. Oral presentations by students for evaluation.

Content

The school covers majority of topics covered under quantum optics like Cavity QED, Circuit QED, opto-mechanics, Open quantum systems, ultra-cold atoms, foundations of quantum mechanics etc. Also includes very recent offbeat research topics in quantum mechanics like quantum biology, quantum optics with X-rays etc. There will be pedagogical lectures on these topics by leading theorists around the world, followed by their corresponding realizations in the experimental domain.

Also, there will 3 hours of lectures on advanced computational techniques used in many body physics like DMRG and Tensor networks.

Finally, lab tours of the concerned labs in EPFL (under consideration) for greater understanding of the topics and better interaction with the researchers.

Evaluation will be carried in the form of oral presentations (and posters, if the number of participants are too high) by the students on topics selected by the speakers and will be followed just after the talk of that speaker. It shall be followed by 15 minutes of discussion.

Time shall be allotted for separate poster presentation for the students to present their own research work and discuss with the researchers.

Keywords

Quantum optics, light-matter interaction

Resources**Websites**

- <http://lightmatter2017.epfl.ch/>