

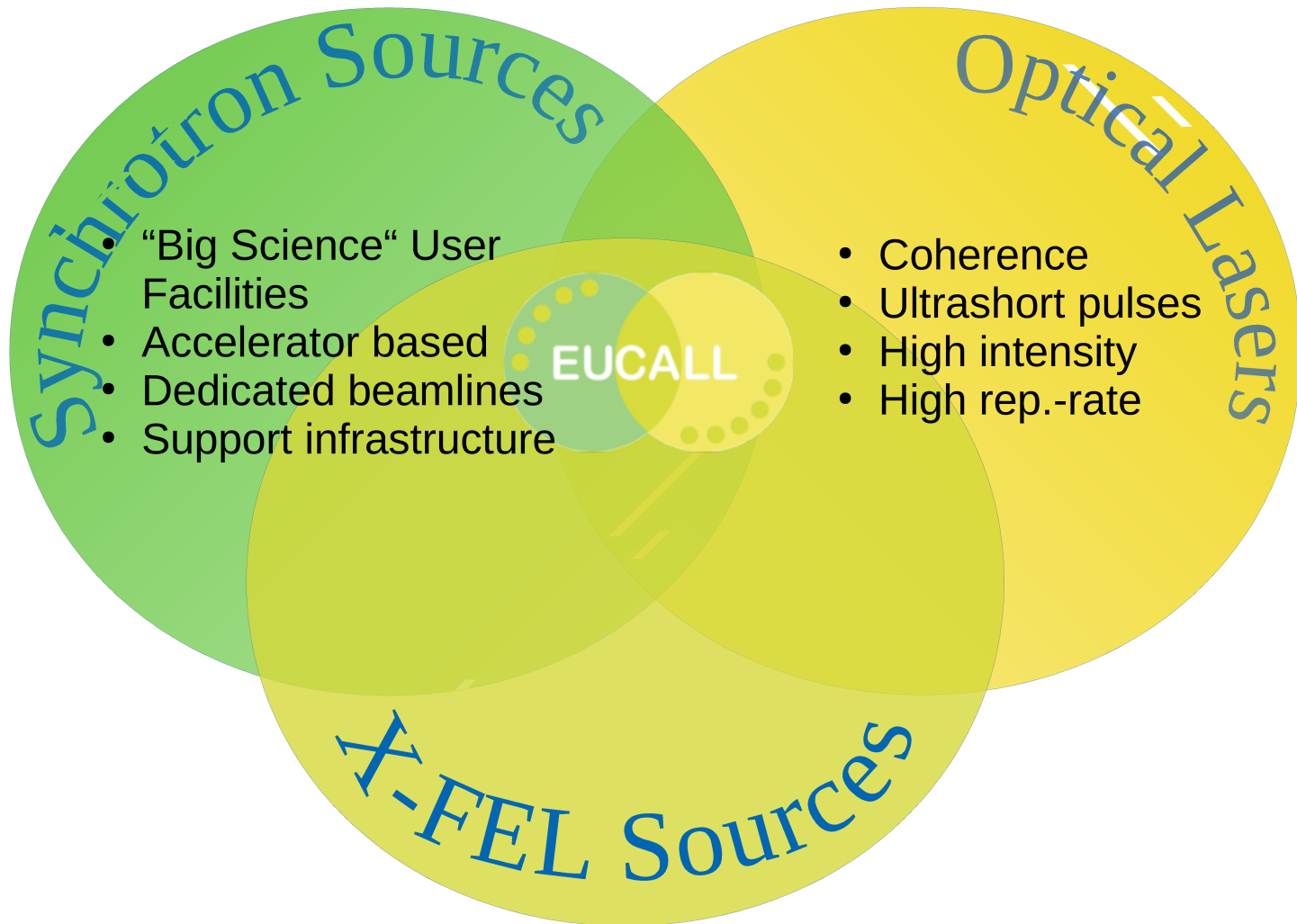
Welcome

EUCALL Workshop on Theory and Simulation of Photon-Matter Interaction
July 1st - 6th 2017
ELI-ALPS, Szeged, Hungary



LUND UNIVERSITY





Converging science and technology at optical laser and x-ray laboratories

- Photon facilities combine x-ray and optical laser sources to provide an state-of-the-art research infrastructure:
 - Pump-probe techniques
 - Creation of extreme states of matter
 - Sample control and characterization
 - Laser driven x-ray sources

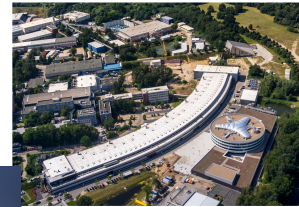
- Ultra-short & ultra-intense pulses of x-rays and optical laser light
 - Common technological challenges:
 - Pulse control and characterization
 - Data acquisition
 - Sample/target delivery
 - **Theory and simulations**
 - New research opportunities



ESRF



MAX IV



PETRA 3

FLASH



Eu. XFEL



SwissFEL



HZDR



ELI

More info on EUCALL
 ⇒ G. Appleby, Mo afternoon session



Workshop Scope



□ **Overview on state-of-the-art** methods and approaches:

- Theoretical foundations
- Approximations used and realms of validity
- Numerical implementation

□ **Challenges to theory and simulations given the current state of experiments?** How are these challenges met?

□ **Future challenges** in the light of near and mid-term future developments at advanced optical and x-ray light sources

$$\mathcal{L} = \bar{\psi} (i\hbar c \gamma^\mu \partial_\mu - mc^2) \psi - \frac{\epsilon_0 c^2}{4} F_{\mu\nu} F^{\mu\nu} + e j_\mu A^\mu$$





Program scheme

- **8:15** Busses leave from Novotel, Szeged
- 9:00 Morning lecture
- 10:00 Break
- 11:00 Contributed talks
- 13:00 Lunch break
- 14:30 Afternoon Lecture
- 16:00 Break
- 16:30 Contributed talks
- 18:45 Busses leave to Novotel, Szeged

Check online program for updates!

Exceptions Wednesday

- 14:30 Site visit ELI-ALPS
- 16:30 Busses leave to Szeged
- 19:00 Workshop dinner at *Roosevelt téri Halászcserda* (in walking distance to hotels)

