Program

LION Summer School:
Modern physics at all scales

Monday July 11 – Wednesday July 20, 2016

Monday July 11

09:00 – 09:30  Arrival and coffee / tea
09:30 – 10:00  Welcome to LION (Including brief review of Dutch traffic rules for bicycles)
10:00 – 11:00  Dr. Dorothea Samtleben: Introduction to neutrino astronomy
11:00 – 11:30  break
11:30 – 12:30  Prof. Tjerk Oosterkamp: Magnetic resonance force microscopy
12:30 – 13:30  lunch@Snellius Cafeteria (with speakers of the day)
13:30 – 14:30  Dr. Milan Allan: Electronic matter at the atomic scale
14:30 – 15:00  break
15:00 – 16:00  Prof. Gerard Nienhuis: Photons and Waves
16:00 – 17:00  Prof. Dirk Bouwmeester: Quantum Optics/ Cavity QED
17:00  departure bus to collect the bikes at Easybike
18:30  Welcome dinner Restaurant “Malle Jan”

Tuesday July 12

09:00 – 10:00  Dr. Alexey Boyarsky: Introduction to the Standard Model of particle physics
10:00 – 11:00  Dr. Alexey Boyarsky: Why do we believe that the Standard Model is incomplete?
11:00 – 11:30  break
11:30 – 12:30  Dr. Dorothea Samtleben: neutrino oscillations
12:30 – 13:30  lunch@Snellius Cafeteria (with speakers of the day)
13:30 – 14:30  Prof. Michel Orrit: Single molecule optics
14:30 – 15:00  break
15:00 – 16:00  Prof. Thijs Aartsma: Single bio-molecule studies
16:00 – 17:00  Dr. Daniela Kraft: Self-assembly in colloidal systems
20:00  Pub quiz, Café “Storm”

Wednesday July 13

09:00 – 10:00  Prof. Dirk Bouwmeester: Optomechanics
10:00 – 11:00  Prof. Thijs Aartsma: Single bio-molecule studies
11:00 – 11:30  break
11:30 – 12:30  Prof. Michel Orrit: Single molecule optics
12:30 – 13:30  lunch@Snellius Cafeteria (with speakers of the day)
13:30 – 17:00  Hands on Lab visit 1: Huygens Laboratory (setups: Orrit/Aartsma/Bouwmeester/…)
18:00  Departure bus to BBQ on the beach
18:30  BBQ on the beach
21:30  Departure bus to University
Thursday July 14

09:00 – 10:00  **Dr. Milan Allan:** electronic matter at the atomic scale

10:00 – 11:00  **Dr. Jaap Kautz:** introduction to Low Energy Electron Microscopy (LEEM)

11:00 – 11:30  break

11:30 – 12:30  **Prof. Tjerk Oosterkamp:** Magnetic resonance force microscopy and other cool experiments

12:30 – 13:30  lunch@Snellius Cafeteria (with speakers of the day)

13:30 – 17:00  Hands on Lab visit 2: Kamerlingh Onnes Laboratory
(setups: Oosterkamp/Allan/van der Molen/Ruitenbeek/Kautz ...)

Free evening

Friday July 15

09:00 – 10:00  **Dr. Alessandra Silvestri:** Introduction cosmology, modified gravity

10:00 – 11:00  **Prof. Ana Achúcarro:** Observing the Big Bang

11:00 – 11:30  break

11:30 – 12:30  **Prof. Martin van Hecke:** Mechanics of metamaterials

12:30 – 13:30  lunch@Snellius Cafeteria (with speakers of the day)

13:30 – 14:30  **Dr. Daniela Kraft:** Self-assembly in colloidal systems

14:30 – 15:30  **Prof. Martin van Hecke:** Mechanics of metamaterials (introduction lab)

15:30 – 16:00  break

16:00 – 17:00  Lab tour: Huygens Laboratory
(setups: Kraft, Hecke...)

Free evening

Saturday July 16

Amsterdam Vondelpark / Rijks Museum, etc.

Sunday July 17

Cycling to Dunes/Beach
(rain alternative: Museum in Leiden)

Monday July 18

09:00 – 10:00  **Prof. Carlo Beenakker:** Quantum computers

10:00 – 11:00  **Dr. Luca Giomi:** topology in fluid dynamics

11:00 – 11:30  break

11:30 – 12:30  **Prof. Koenraad Schalm:** Introduction theoretical physics

12:30 – 13:30  lunch@Gorlaeus Cafeteria (with speakers of the day)

13:30 – 14:30  **Prof. Thomas Schmidt:** Introduction cell biology

14:30 – 15:00  break

15:00 – 16:00  **Dr. Stefan Semrau:** Quantitative single cell biology

16:00 – 17:00  student presentations

Free evening
Tuesday July 19

09:00 – 10:00  **Dr. Stefan Semrau:** Quantitative single cell biology
10:00 – 11:00 **Prof. Thomas Schmidt:** Cell biology
11:00 – 11:30 break
11:30 – 12:30 **Prof. Doris Heinrich:** Dynamical processes in living cells
12:30 – 13:30 lunch@Gorlaeus Cafeteria (with speakers of the day)
13:30 – 17:00  **Hands on Lab visit 4:** Cell Observatory
(setups: Schmidt/Heinrich/Semrau/van Noort,...)

19:00  Good bye dinner at the “very Italian Pizza”

Wednesday July 20

09:00 – 10:00  **Dr. Lena Beletkaia:** Dynamical processes in living cells
10:00 – 11:00  **Dr. Luca Giomi:** Topology in fluid dynamics
11:00 – 11:30 break
11:30 – 12:30  **Prof. Carlo Beenakker,** Quantum computers
12:30 – 13:30 lunch@Gorlaeus Cafeteria (with speakers of the day)
14:00  Return bikes to Easyfiets

End of program