

Bonn-Cologne Graduate School of Physics and Astronomy
Intensive Week Course
Quantum Electronics and Laser Physics
An introductory approach

February 11 - 15, 2019, seminar room - II. Phys. Institute, UoC



Main Lecturer:

Prof. Dr. Fulvio Parmigiani (Dipartimento di Fisica, Università degli Studi di Trieste/ Elettra-Sincrotrone Trieste)

Scope of the Lectures

This intensive course is tailored for M.Sc. & PhD level students and is focused on the essential physical mechanisms to generate coherent light.

The main objective of these lectures is to provide the students a thorough background on:

(1) how light propagates in linear media, (2) the working principle of optical resonators, (3) Einstein's two level model for the light-matter interaction, (4) stimulated emission, (5) population inversion, (6) laser modes, (7) why and how light from lasers is different from thermal (normal) light, (8) examples of lasers systems and their applications.

A preliminary exposure to introductory quantum mechanics and electromagnetism is expected.

The lectures (9⁰⁰ to 12⁰⁰) will be accompanied by exercises in the afternoon (14⁰⁰ to 15⁰⁰). It is foreseen that successful attendance of the exercises will be rewarded within the credit-point scheme.

No fees are required. The number of attendants will be limited to about 40. Due to organizational reasons, we require you to register. Please indicate that you need the credit points upon registration.

Please, send your informal registration requests until 28.01.2019 to schulz@ph2.uni-koeln.de. If you have any further question, please contact Prof. Paul H. M. van Loosdrecht via pvl@ph2.uni-koeln.de.

The program and additional information will be timely available at: www.ph2.uni-koeln.de

