האוניברסיטה העברית בירושלים
The Hebrew University of Jerusalem

American Physical Society
Racah Institute of Physics

Workshop V

International Year of Light 2015

Centennial journey – from classic light to quanta and back

December 16, Wednesday, Danciger B building, seminar room, 4.00 pm
(16.12.15 at 16.00)

1. 16.00 – 16.10 Prof. M. Ya. Amusia **Introductory remarks**
2. 16.10 – 17.10 Prof. G. Marcus **High energy, short pulse lasers – source for high field and ultrafast processes**
3. 17.10 – 17.50 Prof. M. Amusia **Theory of photoionization by low and high intensity photon beams**
4. 17.50 -18.15 - **General discussion**

All interested, including students, are welcomed.

Refreshments will be served in the lobby of Danciger B building, from 15.45

M. Ya. Amusia and R. Herber, APS Fellows

Prof. Gilad Marcus
High energy, short pulse lasers – source for high field and ultrafast processes

Abstract:
Abstract: Intense ultrashort light pulses comprising merely a few wave cycles became routinely available during the last decade. These lasers advances opened the door to real-time observation and time-domain control of atomic-scale electron dynamics. I will review the related strong field and "attosecond" physics and discuss aspects of classical and quantum physics.

Prof. Miron Amusia
Theory of photoionization by low and high intensity photon beams
Abstract:
We will discuss the development of the theory from the classical picture that have contradicted experimental observations to the Einstein quantum formulation that for more than half a century satisfied researchers. With invention of lasers and growth of the intensity of generated by them radiation, a whole variety of observed facts disclosed the limits of Einstein's approach. We will discuss the so-called back-scattering mechanism that is able to describe the photoionization at high photon beam intensities and low frequencies and will mention some open problems at high frequencies. Main attention will be given to multi-electron atoms and molecules as objects of photoionization.