

Joint CQSE and CASTS Seminar

Weekly Seminar
Mar. 12, 2012 (Monday)

TIME Mar. 12, 14:30 ~ 15:30
TITLE Attosecond Streaking and Rescattering of Atoms In an Intense Laser Field
SPEAKER Prof. Xiao-Min Tong
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PLACE Rm716, CCMS & New Physics Building, NTU

Abstract

In this talk, I will introduce a numerical method to solve the time-dependent Schrodinger equation in time integral form. Then I will present three applications of the method to atoms in an intense laser field. Firstly, I will show how to numerically observe the rescattering wavepacket in laser-atom interactions. The rescattering is a key process to understand many dynamics in the intense laser interaction with materials, such as high-order harmonic generation, above threshold ionization (ATI) and etc. Then, I will present an example of attosecond striking—creating an electron wavepacket by an attosecond pulse and striking it by an infrared laser— to illustrate the physical origin of the lower energy ATI peaks. Finally, I will discuss how to obtain the detailed structure information of atoms or molecules from the ATI spectra in the mid-IR field.

