



THE CHINESE UNIVERSITY OF HONG KONG
Department of Physics
COLLOQUIUM

The Journey of an Electron Knocked Out Of an Atom by Ultrafast Intense Laser: From Tunneling To Re-Collision

by



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Time: 4:00 - 5:00 p.m.

Join ZOOM Meeting: <https://qrgo.page.link/7enov>



ALL INTERESTED ARE WELCOME

Abstract

Ionization of an atom or molecule by low-frequency intense laser pulse can be seen as a tunneling process in which the Coulombic potential is “tilted” by the laser field allowing the electron to escape via quantum tunneling. The escaped electron wave-packet is driven by the laser field to accelerate and subsequently return to its parent ion. Such electron “re-collision” process results in intriguing outcomes including high-energy photoelectron, non-sequential ionization and high-harmonic generation. These phenomena have led to attractive applications such as generating coherent extreme-ultraviolet pulses and ultrafast molecular imaging. In this colloquium, I will review the recent trends in the research of intense laser-atom interaction, then I will highlight my works on (i) strong-field ionization with frequency-tunable infrared laser, and (ii) resonance-enhanced high harmonics in metal ions.