Title : electrons get real
Name : Taeho, Ryu

The tunneling effect is a purely quantum mechanical effect, which provides us a concrete explanation of how a particle is able to penetrate a barrier with higher potential energy than the energy of the particle. However, when physicists try to understand the dynamics of subatomic phenomena, they tend to start with their scientific research from classical point of view.

In that spirit, Shafir *et al*. measured the exact "exit" time of electron at which electrons start tunneling after a laser field is applied. They have decomposed behavior of electron densities into separate electron trajectories, combining these to determine starting time. Accurate knowledge of the electron excursion times is important for understanding of many ultrafast experiments in which ionization triggers a dynamic process and resulting ion with electrons takes a snap shot of that process since extremely short period of ionization time even affects the result of measure. They used High-harmonic generation method in the experiment and the quantum orbit model to analyze the results.

By facilitating the real-time observation of attosecond electron dynamics, this approach will increasingly compete with ultrafast spectroscopic methods in which molecules are directly probed by attosecond light pulses.