

Joint CQSE and CASTS Seminar

Weekly Seminar
May 22, 2015 (Friday)

TIME May 22, 2015, 14:30 ~ 15:30
TITLE Can the electron be divided (well, at least theoretically)? A split kinetic energy method for quantum competing modes
SPEAKER Prof. Sheng D. Chao
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PLACE Rm716, CCMS & New Physics Building, NTU

Abstract

The titled question has long been debated. Using the recently proposed split kinetic energy method, we hope to shed some light on it at least partially through theoretical means. A somewhat philosophical introduction is followed by the mathematical formulation of this method to solve quantum eigenvalue problems with two competing modes. The solution scheme is illustrated by first using a toy model and then two standard quantum systems with competing modes: a charged harmonic oscillator in strong magnetic fields and the hydrogen molecule ion. It is the hope of this seminar to stimulate some new views and discussions (or possibly even more debates) to this very old question, first asked by natural philosophers (and the latter renamed physicists).

