

HHG and attosecond physics in the condensed matter phase

Thomas Brabec

University of Ottawa, Department of physics

Recently high harmonic generation (HHG) has been demonstrated in the condensed matter phase. In our talk we discuss the different mechanisms driving HHG. The dominant mechanism driving HHG in semiconductors is identified; theoretical results are confirmed by experimental measurements. We show that the dominant mechanism for HHG in semiconductors is closely related to the process responsible for HHG in atomic and molecular gases. This opens the possibility to translate many of the techniques developed for atomic and molecular attosecond physics to the condensed matter phase. Potential applications, such as bandgap tomography, will be discussed.