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Self-Consistent Radiative Scattering in Time Dependent Density Functional Theory RYAN HATCHER, ALAN TACKETT, SOKRATES PANTELIDES, Vanderbilt University — Time Dependent Density Functional Theory (TDDFT) is an ab initio theory that can be used to model time varying electron densities. We propose a semi-classical method for calculating the self-consistent radiation from a time varying electron density in a TDDFT framework. This scheme allows one to simulate a system where a time varying electron density scatters energy both into the lattice as well as into an electro-magnetic field. We will present a description of this technique and describe a few applications in which it has been employed.

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