Semi-classical Electrodynamics

JOHN LESTONE, Los Alamos National Laboratory — Quantum electrodynamics is complex and its associated mathematics can appear overwhelming for those not trained in this field. We describe semi-classical approaches that can be used to obtain a more intuitive physical feel for several QED processes including electro-statics, Compton scattering, pair annihilation, the anomalous magnetic moment, and the Lamb shift, that could be taught easily to undergraduate students. Any physicist who brings their laptop to the talk will be able to build spread sheets in less than 10 minutes to calculate g/2=1.001160 and a Lamb shift of 1057 MHz.