Semiclassical Approximation for 1+1 Quantum Electrodynamics I: Backreaction, energy transfer and particle number.[1] SILVIA PLA GARCIA, JOSE NAVARRO-SALAS, Univ de Valencia, PAUL R. ANDERSON, ROBERT S. LINK, IAN M. NEWSOME, Wake Forest University — We analyze solutions to the backreaction equations in 1+1 dimensional semiclassical electrodynamics when a strong, time-varying and homogeneous electric field coupled to either a quantized scalar field or a quantized spin $\frac{1}{2}$ field. Details of the particle production process are shown along with the transfer of energy between the electric field and the particles. Special attention will be given for the limit in which the mass of the created particles is zero. The validity of the semiclassical approximation will be discussed.

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