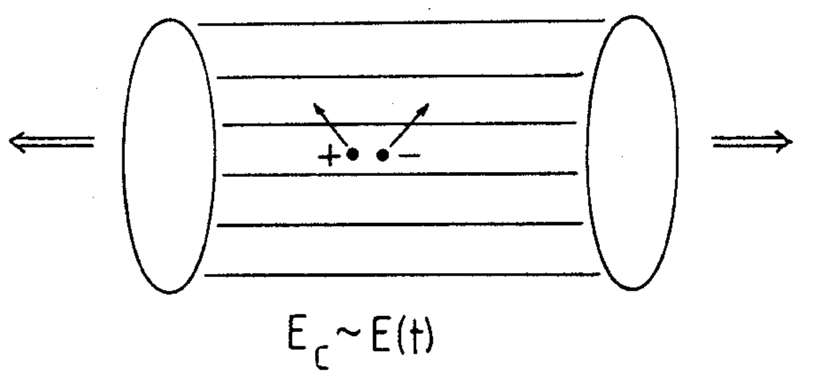

FIG. 1: Schematic view of pair production by a chromoelectric field formed in the wake of two receding ultra-relativistic nuclei. The field is here taken to be Abelian, and therefore an ordinary electric field, and further assumed to be homogeneous and to fill all space.

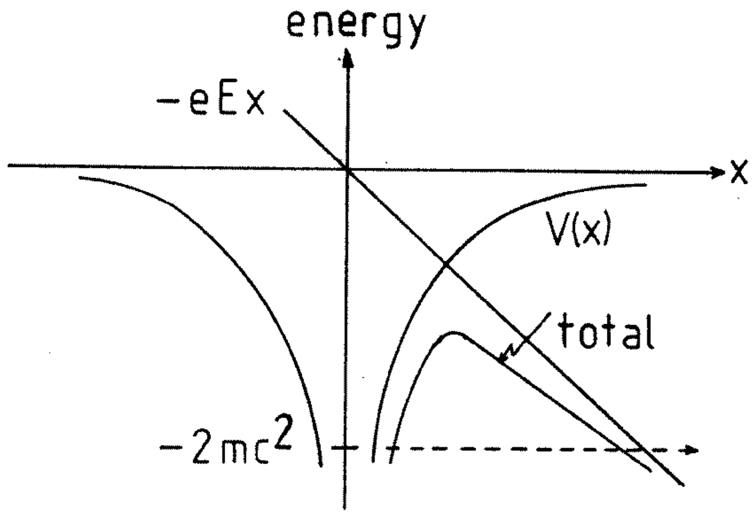

FIG. 2: A simplistic model for the tunneling mechanism by which the presence of a homogeneous electric field allows pairs in the Dirac sea to emerge as real particles. The latent pair, at energy $-2mc^2$, corresponding to the combined rest-mass energy, is viewed as bound in a fictitious potential $V(x)$. The presence of the electric field provides a potential $-eEx$, which lowers one side of the barrier and permits tunneling from the total of the two potentials.

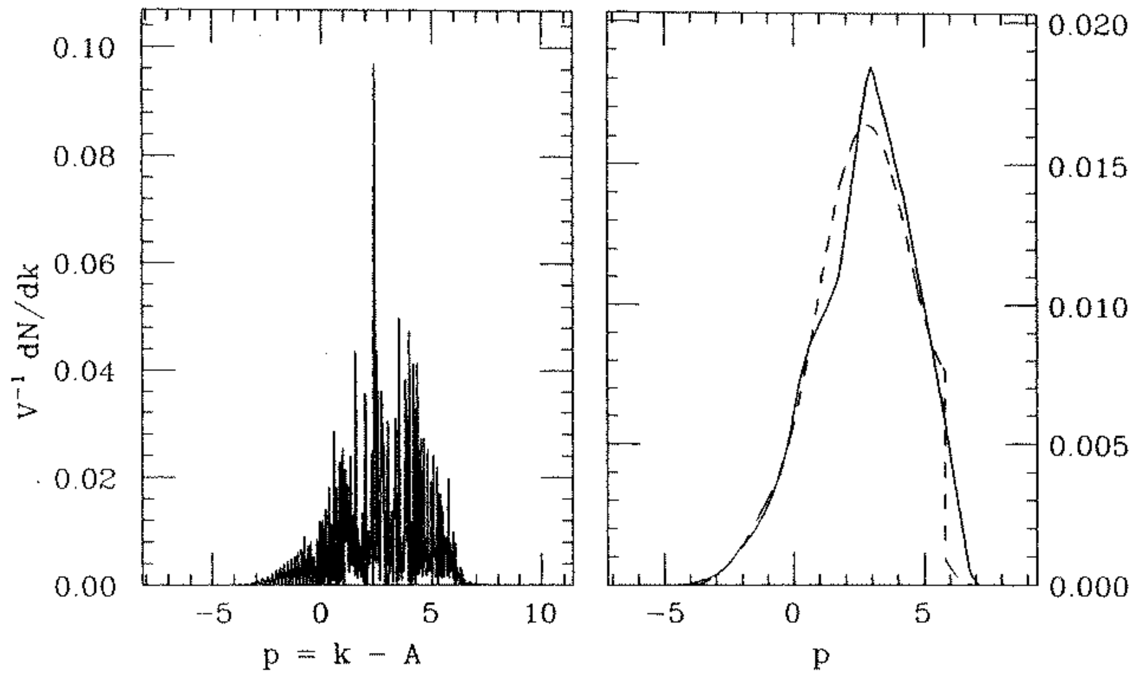

FIG. 3: The number of pairs produced per unit volume (or length, since we have only one spatial dimension here) and momentum (in units of the particle mass m) interval dk at $p = k - eA$ for $e^2/m^2 = 1$ and $\tilde{E}(0) = eE(0)/m^2 = 1$ at time $\tau = mt = 130$, all in scaled, dimensionless units as indicated. In the right-hand figure, the solid line shows the result of smoothing the exact numerical solution on the left by combining 75 bins into one, and the dashed line is the solution of eq. (20) for $f(p,t)$ under these same conditions.

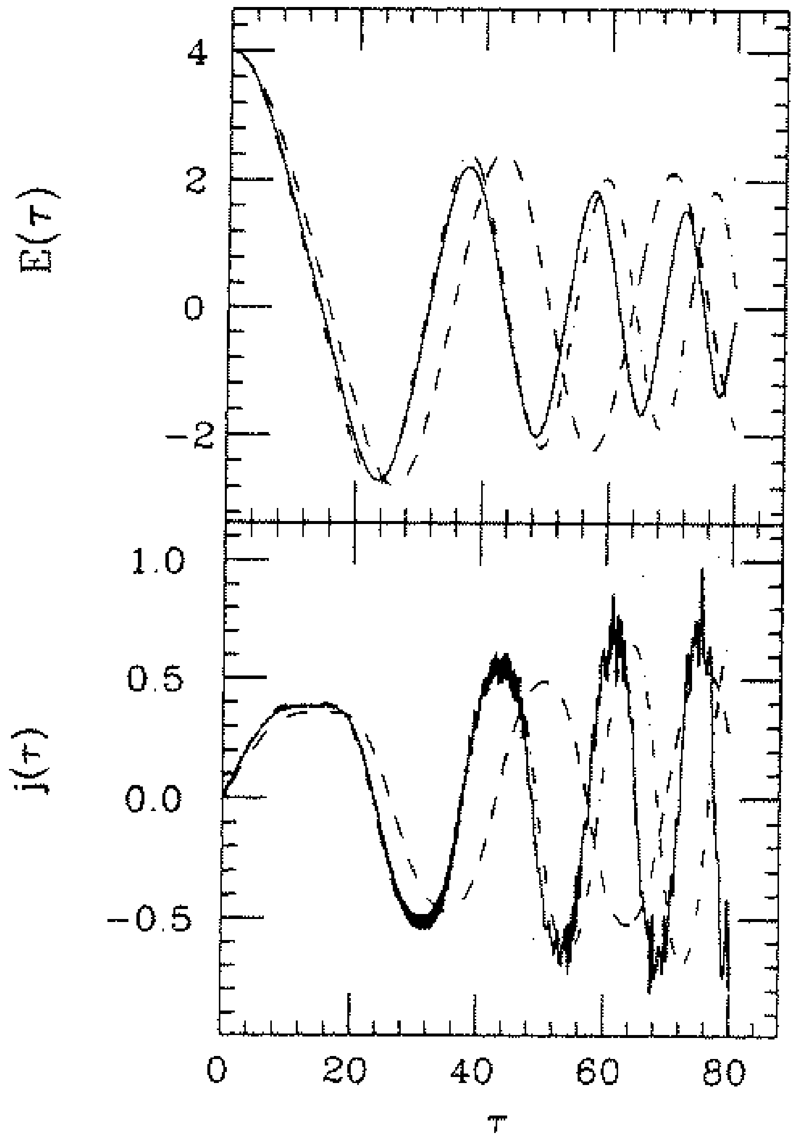

FIG. 4: Results for $\tilde{E}(\tau)$ and $\tilde{j}(\tau)$ for $\tilde{E}(0) = 4$ and $e^2/m^2 = 0.1$ in the same units defined in the caption to the previous figure. The solid line shows the solutions to the coupled field equations; the dashed line is for the Boltzmann equation (20); and the dot-dash line—which for short times is almost indistinguishable from the solid line—is the Boltzmann equation modified by a boson enhancement factor.

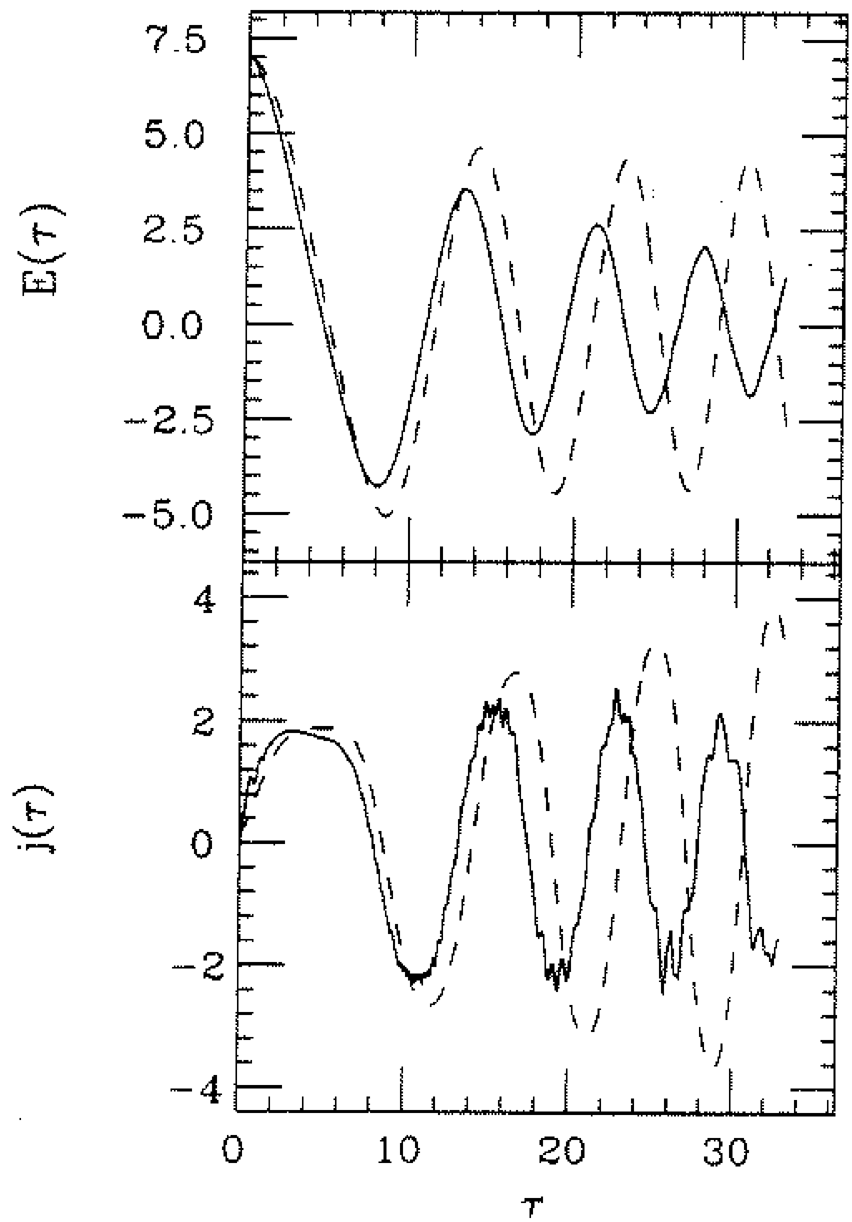

FIG. 5: Results in three spatial dimensions $(3+1)$ for $\tilde{E}(\tau)$ and $\tilde{j}(\tau)$ for $\tilde{E}(0) = 7$ and $e^2/m^2 = 4$ in the same units defined in the caption to fig. 3. The solid line shows the solutions to the coupled field equations and the dashed line is for the Boltzmann equation (20).