Dirac Equation for Electrodynamic Model Particle J.X. ZHENG-
JOHANSSON, IOFPR — We set up the Maxwell's equations and subsequently the
classical wave equations for the electromagnetic waves which together with their gen-
erating source, an oscillatory charge of zero rest mass, make up a particle travelling
at velocity v as with the charge in the fields of an external scalar and vector po-
tentials. The direct solutions in constant external field are Doppler-displaced plane
waves propagating at the velocity of light c; at the de Broglie wavelength scale and
expressed in terms of the dynamically equivalent and appropriate geometric mean
wave variables, these render as functons identical to the space-time functions of the
Dirac spinor, and these are identical to the de Broglie phase waves given previously
from explicit superposition. For two spin-half particles of a common set of space-
time functions constrained with antisymmetric spin functions as follows the Pauli
principle for same charges and as separately indirectly induced based on experiment
for opposite charges, the complete wave functions are identical to a Dirac spinor.
The back-substitution of the so explicitly determined complete wave functions in
the corresponding classical wave equations of the two particles, subjected further
to reductions appropriate for the stationary- state particle motion and to rotation
invariance when in three dimensions, give a Dirac equation set; the procedure and
conclusion are directly extendible to arbitrarily varying potentials by use of the
Furious theorem and to three dimensions (full paper: QTS5).

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