A Possible Origin of the Fine Structure Constant ERNST WALL,
Institute for Basic Research, Palm Harbor, FL — We relate the Bohr hydrogen atom
to a finite sized, revolving charge, vortex model of the electron that has a light speed
Compton wavelength orbit. (Defs: Comptons (or Cmptns)=unit length, electron
rotation time=unit t, Cmptn/rot=unit v.) We utilize their radial dimensions to
determine an origin of the Bohr atom's inverse fine structure constant, and that
value is 137.019, which is within 120 ppm of observed. Its value is determined
primarily by a train of 43 Cmptn wavelets including both those emitted by the
electron toward the nucleus and those reflected back to it, this combined distance
being approximately twice the value of the Bohr radius. In addition, there is a
0.58969 Cmptn wavelet, whose dimension is determined by a three quarter rotation
of the electron charge from its 90 degree emission point, and corrected for the finite
sized electron. That value is added to the 43 Cmptns so that $1/\alpha = (43 + 0.58969)$
$\pi = 136.94103$ Cmptns. We multiply this by 1.000572, the combined potential well
and reduced mass corrections to the wavelength, and we obtain the above value. –
References: **www.tachyonmodel.com**, Ernst Wall, **The Physics of Tachyons**,
Hadronic Press (1995)

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