

Abstract Submitted
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A Confinement Theory for Quarks CARL CASE, Case Consulting —
Wilson et al (Phys Rev D, Vol 49, pp 6720; 1994) states that 4 barriers have prohibited a quark confinement theory. These are: (1) diverging confinement potentials, (2) spontaneous chiral symmetry breaking, (3) unlimited growth of running coupling constant in confinement region, and (4) non-perturbative structure of QCD vacuum. This paper identifies a *fiber bundle* (a constant force acting upon each flavor) and *winding numbers* matching one to one with angular momentum quantum numbers. The single constant force spawns a degenerate series of ground states for the quark flavors. Chiral symmetry is broken. Quarks are trapped by color magnetic forces. Gluons, in the form of quantized color magnetic flux bundles, are trapped by encircling quarks. The flavors behave as a composite particle. Quantized color magnetic flux allows calculation of the running coupling constant. Using Hartree-Fock methods and chiral symmetry breaking leads to Dirac equations for each flavor and anti-flavor (a set of 12 Dirac equations). Mass calculations are presented for observed baryons and mesons. A scaling law for flavor speeds predicts the b' flavor is in the mass range of 110-120 GEV.

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