With Iterative and Bosonized Coupling towards Fundamental Particle Properties

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Abstract

Previous results have shown that the linear topological potential-to-phase relationship (well known from Josephson junctions) is the key to iterative coupling and non-perturbative bosonization of the 2 two-spinor Dirac equation. In this paper those results are combined to approach the nature of proton, neutron, and electron via extrapolations from the Planck scale to the System of Units (SI). The electron acts as a bosonizing bridge between opposite parity topological currents. The resulting potentials and masses are based on a fundamental soliton mass limit and two iteratively obtained coupling constants, where one is the fine structure constant. The simple non-perturbative and relativistic results are within measurement uncertainty and show a very high significance. The deviation for the proton and electron masses are approximately 1 ppb (10^-9), for the neutron 4 ppb.

Keywords:	Dirac, topological, fundamental, particle, spin, proton, electron, neutron, bosonization, modes, nonabelian, nonlinear, non-pertubative, breather, nonpertubative, pseudosphere, phase, berry, Gordon, sine-Gordon, Aharonov, Bohm, Baecklund, Thirring, Rayleigh, fine structure, iteration, iterative, exact
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