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## Lattice Conformal Field theory on Curved Manifolds

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A Quantum Finite Element (QFE) Lagrangian is formulated for a general simplicial complex approximation to a smooth Euclidean Riemann manifold. The construction is applied to Wilson Dirac fermions with the appropriate lattice spin connection and to  $\phi^4$ -theory with QFE counter terms required for these theories to converge in the continuum limit. Numerical tests are given for the Wilson-Fisher fixed point in 2D with comparison to the exact solution of the Ising CFT on the two sphere and for the 3D  $\phi^4$ -theory in radial quantization. Potential future applications to more general 3D conformal field theories and 4D Beyond the Standard Model (BSM) gauge theories near the conformal window are suggested.

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