

Abstract Submitted
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Quantum Computational Geodesic Derivative HOWARD BRANDT, U.S. Army Research Laboratory — In recent developments in the differential geometry of quantum computation, the quantum evolution is described in terms of the special unitary group of n-qubit unitary operators with unit determinant. The group manifold is taken to be Riemannian. In the present work the geodesic derivative is clarified. This is applicable to investigations of conjugate points and the global characteristics of geodesic paths in the group manifold, and the determination of optimal quantum circuits for carrying out a quantum computation. **Com-**

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