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Leonard Gross* (gross@math.cornell.edu), Department of mathematics, Cornell University, Ithaca, NY 14853. *Dirichlet forms in holomorphic function spaces.*

If M is a Riemannian manifold and m is a probability measure on M with a smooth, strictly positive density the Dirichlet form operator $A := \text{grad}^* \text{grad}$ is a nonnegative self-adjoint operator in $L^2(m)$ which generates a much explored semigroup, $\exp(-tA)$. In particular if a logarithmic Sobolev inequality holds then the hypercontractive properties of the semigroup in the scale of L^p spaces are well known. But if M is a complex manifold and the semigroup is restricted to the holomorphic L^p functions then stronger hypercontractivity properties hold. Recent work on the action of this semigroup in holomorphic function spaces will be surveyed including applications to Hankel operators and reverse hypercontractivity. (Received September 05, 2000)