Cameron-Martin Theorem for Riemannian Manifolds

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Abstract

The Cameron-Martin theorem is a fundamental result in stochastic analysis. We will show that the Wiener measure on a geometrically and stochastically complete Riemannian manifold is quasi-invariant under the "Cameron-Martin" shift (flow) on the path space over the manifold. This is a complete generalization of the classical Cameron-Martin theorem for Euclidean space to Riemannian manifolds. We do not impose any curvature growth conditions. This is a joint work with Elton Hsu.