On the semimartingale property of Brownian bridges on complete manifolds

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Place **Campus Kirchberg, room B04**

It is by now well-known that a Brownian bridge on a compact Riemannian manifold is a semimartingale including its terminal time. In the noncompact case, many paper requires some global curvature bounds to guerantee the same result. In this talk, I will explain that in fact every Brownian bridge on a complete (possibly noncompact and connected) Riemannian manifold is a semimartingale including its terminal time, without any assumptions on the curvature. As in the compact case, one has to deal with the singularity of the heat kernel (to be precise: with the logarithm of its gradient) near $t = 0$, which can be done with some rather delicate localized heat kernel bounds that can be derived from results by Saloff-Coste and Thalmaier-Arnaudon.