**Shy and Fixed distance couplings on Riemanian manifolds**

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*Abstract.* We show that on any Riemannian manifold with the Ricci curvature non-negative (and some other technical conditions) we can construct a coupling of two Brownian motions which are staying fixed distance for all times. We show a more general version of this for the case of Ricci bounded from below uniformly by a constant $k$. In the terminology of Burdzy, Kendall and others, a shy coupling is a coupling in which the Brownian motions do not couple in finite time with positive probability. What we construct here is a strong version of shy couplings on Riemannian manifolds. On the other hand, this can be put in contrast with some results of von Renesse and K. T. Sturm which give a characterization of the lower bound on the Ricci curvature in terms of couplings of Brownian motions and our construction optimizes this choice in a way which will be explained. This is joint work with Mihai N. Pascu.