1063-53-73 **Kevin C Brighton*** (kcbrighton@math.ucsb.edu). *A Liouville-type Theorem for Smooth Metric Measure Spaces.*

For smooth metric measure spaces $(M, g, e^{-f}dvol)$ we prove a Liuoville-type theorem when the Bakry-Emery tensor is nonnegative and f is bounded. This generalizes a result of Yau, which is recovered in the case f is constant. This result follows from a gradient estimate for f-harmonic functions on smooth metric measure spaces with Bakry-Emery tensor bounded from below and f bounded. (Received August 04, 2010)