Mathematics > Differential Geometry

Liouville-type theorems and applications to geometry on complete Riemannian manifolds

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(Submitted on 6 Nov 2010)

On a complete Riemannian manifold M with Ricci curvature satisfying $$\textrm{Ric}(\nabla r,\nabla r) \geq -Ar^2(\log r)^2(\log(\log r))^2...(\log^{k}r)^2$$ for $r\gg 1$, where A>0 is a constant, and r is the distance from an arbitrarily fixed point in M. we prove some Liouville-type theorems for a C^2 function $f:M\rightarrow \Bbb R$ satisfying $\Delta f\geq F(f)$ for a function $F:\Bbb R\rightarrow \Bbb R$.

Subjects:	**Differential Geometry (math.DG)**
MSC classes:	31B05, 57R57, 53A30, 53C42
Cite as:	**arXiv:1011.1540v1** [math.DG]

Submission history

From: Chanyoung Sung [view email]
[v1] Sat, 6 Nov 2010 06:55:42 GMT (8kb)

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