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Theorem (Llarull, 1998)

Let $M^n$ be a closed spin Riemannian manifold and let $S^n$ be the round $n$-sphere of radius 1. Suppose there exists $f : M^n \to S^n$ with non-zero degree and $dil_2(f) \leq 1$ (f is area-decreasing.) Then either at some point $M^n$ has scalar curvature less than $n(n-1)$ (the scalar curvature of $S^n$) or $f$ is an isometry.