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Manifolds with almost nonnegative curvature operator

We show that n -manifolds with a lower volume bound v and upper diameter D bound whose curvature operator is bounded below by $-\varepsilon(n, v, D)$ also admit metrics with nonnegative curvature operator. The proof relies on heat kernel estimates for the Ricci flow and shows that various smoothing properties of the Ricci flow remain valid if an upper curvature bound is replaced by a lower volume bound.