

Title: k-Positive Ricci curvature: existence and applications

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Abstract:

On a Riemannian manifold, we introduce 'intermediate' notions of positive curvature which lie between positive scalar curvature and positive Ricci curvature. For a given curvature condition, we present a technique for constructing a hypersurface within any given Riemannian manifold (of suitably high dimension) which satisfies that condition. This provides insight into how these conditions restrain, or fail to restrain, the fundamental group. These results are a far-reaching generalization of a classical paper of Carr from the 1980s.