Title: Isotopy, Concordance, and Positive Intermediate Scalar Curvature

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Abstract:

The notions of isotopy and concordance play a key role in understanding spaces of Riemannian metrics which satisfy a given curvature constraint. Both are equivalence relations on spaces of metrics and usually isotopy implies concordance. We consider the difficult problem of whether the converse holds in the case of positive (p,n)-intermediate scalar curvature, where the intermediate curvatures (defined by M. Labbi) interpolate between the scalar (p=0) and sectional (p=n-2) curvatures. In particular, we show that under reasonable conditions, and for a particular type of concordance known as a Gromov-Lawson concordance, this converse does indeed hold. This generalises a result of M. Walsh for positive scalar curvature.