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*Fractional Poincare inequalities on manifolds with finite total Q-curvature*

**Abstract**

We establish new fractional Poincare inequalities encoding geometry of conformally flat manifolds with finite total Q-curvature. The method of proof is based on some improvement of the standard Poincare inequality and harmonic analysis techniques. We will give a description of the underlying geometry and in particular the role of the Q-curvature.