Existence and multiplicity of solutions to fourth order elliptic equations with critical exponent on compact manifolds

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Abstract :

This paper deals with some perturbation of the so called prescribed scalar Q-curvature type equations on compact Riemannian manifolds; these equations are fourth order elliptic and of critical Sobolev growth. Sufficient conditions are given to have at least two distinct solutions first without using the concentration-compactness technic but with a suitable range of the parameters and secondly by using the concentration-compactness methods.

Keywords : Fourth order elliptic equation; critical Sobolev exponent.