Existence results for problems involving non local operator with an asymmetric weight and with a critical nonlinearity

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June 24, 2024

Conference on Calculus of Variations in Lille – 4th edition

Abstract

Recently, great attention has been focused on the study of fractional and non-local operators of elliptic type, both for pure mathematical research and in view of concrete real-world applications. Our problem is related to the fractional Yamabe problem. First, we study a non-local problem involving the fractional laplacian, a critical nonlinearity with a non-symmetric weight and a pertubation in a bounded domain. We show that in the case of a linear perturbation. Next, if the perturbation is nonlinear, we find non-ground-state solutions for the problem.