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Existence of weak solutions for a fractional $p$-Laplacian in $\mathbb{R}^N$. (Chinese. English summary)

Summary: A fractional $p$-Laplacian equation in $\mathbb{R}^N$ is studied. By virtue of the mountain pass theorem, the existence of weak solutions for the problem is obtained under the condition that the nonlinearity is weaker than the classical Ambrosetti-Rabinowitz condition. The results extend some known conclusions.

MSC:
35D30 Weak solutions to PDEs
35R11 Fractional partial differential equations

Keywords:
fractional $p$-Laplacian equation; weak solution; mountain pass theorem

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