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Abstract. In this paper, we study the multiplicity of solutions for a class of concave-convex $p$-Laplacian equations with the combined effect of coefficient functions of concave-convex terms. By the Nehari method and some analysis techniques, we obtain an exact constant for the effect of coefficient functions of concave-convex terms to ensure this problem has two nonzero and nonnegative solutions and give the relation of size of the two solutions. Moreover, under some stronger conditions, we prove that the two solutions are positive. Our results generalize and improve some known results in the literature.

Key words and phrases: $p$-Laplacian equation, concave-convex terms, sign-changing potential, Nehari method.

REFERENCES


