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Paul Eloe* (peloe1@udayton.edu). *A Leggett-Williams type theorem applied to a 2nth order problem with symmetry.*

In this article we apply an extension of a Leggett-Williams type fixed point theorem to a two-point boundary value problem for a 2nth order ordinary differential equation. The fixed point theorem employs concave and convex functionals defined on a cone in a Banach space. Inequalities that extend the notion of concavity to 2nth order differential inequalities are derived and employed to provide the necessary estimates. Symmetry is employed in the construction of the appropriate Banach space. (Received August 27, 2012)