

A. Henrot and G. A. Philippin, **On a class of overdetermined eigenvalue problems**, *Math. Methods Appl. Sci.*, 20 (1997), no. 11, 905–914.

**Abstract**

In this paper we present some new results of symmetry for inhomogeneous Dirichlet eigenvalue problems overdetermined by a condition involving the gradient of the first eigenfunction on the boundary. One specificity of the problem studied is the dependence of the equation and the boundary condition on the distance to the origin. The method of investigation is based on the use of continuous Steiner symmetrization together with some domain derivative tools. An application is given to the study of an overdetermined eigenvalue problem for a wedge-like membrane.