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Symmetry result for some overdetermined value problems. (English) Zbl 1170.35011

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Authors' abstract: The aim of this article is to prove a symmetry result for several overdetermined boundary value problems. For the two first problems, our method combines the maximum principle with the monotonicity of the mean curvature. For the others, we use essentially the compatibility condition of the Neumann problem.

MSC:

35B05	Oscillation, zeros of solutions, mean value theorems, etc. in context of PDEs	Cited in **2** Documents
35A15	Variational methods applied to PDEs	
35J65	Nonlinear boundary value problems for linear elliptic equations	
35B50	Maximum principles in context of PDEs	
35N10	Overdetermined systems of PDEs with variable coefficients	

Keywords:

compatibility condition; mean curvature; Neumann problem; overdetermined problem; Serrin problem; shape optimization; symmetry

Full Text: DOI

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