

# Radial solutions for Dirichlet systems with Monge-Ampere operator

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## Abstract

We are concerned with a Dirichlet system, involving the Monge-Ampere operator  $\det D^2u$  in a ball in  $\mathbb{R}^N$ . Based on the Leray-Schauder degree, we first obtain the existence of radial solutions for a class of differential systems with general nonlinearities. In addition, we prove that such a system admits positive solutions when nonlinearities satisfy sub- or superlinear growth near origin. Finally, by using the lower and upper solution method, and constructing the subsolution and supersolution, we show the existence and multiplicity of nontrivial radial solutions for Dirichlet systems with Monge-Ampere operator and Lane-Emden type nonlinearities with two parameters.

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