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On Systems of Boundary Value Problems for Differential Inclusions

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摘要

关键词   boundary value problem   systems of differential inclusions   existence of solutions   a priori bounds Bernstein--Nagumo condition

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Abstract Herein we consider the existence of solutions to second-order, two-point boundary value problems (BVPs) for systems of ordinary differential inclusions. Some new Bernstein--Nagumo conditions are presented that ensure {\em a priori} bounds on the derivative of solutions to the differential inclusion. These {\em a priori} bound results are then applied, in conjunction with appropriate topological methods, to prove some new existence theorems for solutions to systems of BVPs for differential inclusions. The new conditions allow of the treatment of systems of BVPs without growth restrictions.

Key words boundary value problem   systems of differential inclusions   existence of solutions   a priori bounds   Bernstein--Nagumo condition

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