Generalized upper and lower solutions for discontinuous ordinary differential equations.

Krzysztof A. Topolski

Institute of Mathematics,University of Gdansk, Wit Stwosz 57, 80-952 Gdansk, Poland, e-mail: matkt@mat.ug.edu.pl

Abstract

First order discontinuous ordinary differential equations are considered. By considering noncontinuous sub and supersolutions (upper and lower absolutely continuous functions) we obtain more general results than in standard theory. We present theorems on the existence of extremal solutions for a large class of boundary value problems. We assume neither continuity nor monotonicity of boundary functions.