Title: Positive Solutions of the Dirichlet Problem for the One-dimensional Minkowski-Curvature Equation

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Abstract: We discuss existence and multiplicity of positive solutions of the Dirichlet problem for the quasilinear ordinary differential equation-(u' / root 1 - u'(2))' = f(t, u). Depending on the behaviour of f = f(t, s) near s = 0, we prove the existence of either one, or two, or three, or infinitely many positive solutions. In general, the positivity of f is not required. All results are obtained by reduction to an equivalent non-singular problem to which variational or topological methods apply in a classical fashion.

Author Keywords: Quasilinear Ordinary Differential Equation; Minkowski-Curvature; Dirichlet Boundary Conditions; Positive Solution; Existence; Multiplicity; Critical Point Theory; Bifurcation Methods; Lower and Upper Solutions

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