

1086-34-908

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The well known Banach contraction theorem has been one of the main results for proving existence and uniqueness of initial value problems.

Recently the study of weakly contractive mappings has become an important subject in the study of ordinary differential equations with periodic boundary conditions.

In this talk we will mention some fixed point theorems involving weakly contractive conditions and define lower and upper solutions of fractional differential equations. Finally we show an application of these results to Caputo fractional differential equations of order  $q$ ,  $0 < q < 1$ , with periodic boundary conditions. We will show that if the problem has a lower solution and it satisfies certain conditions, then it has a unique solution. (Received September 15, 2012)