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Ebene Mboumi\* (exmboumi@ualr.edu), 2801 S. University Ave., Department of Mathematics and Statistics, University of Arkansas at Little Rock, Little Rock, AR 72204, and Eric R. Kaufmann (erkaufmann@ualr.edu), 2801 S. University Ave., Department of Mathematics and Statistics, University of Arkansas at Little Rock, Little Rock, AR 72204. Existence of positive solutions of nonlinear fractional differential equations. Preliminary report.

In this paper we consider the nonlinear fractional equation

$$D^{\alpha}u + f(t, u) = 0, 0 < t < 1, 1 < \alpha \le 2,$$
  
 
$$u(0) = 0, u'(1) = 0,$$

where  $D^{\alpha}$  is the standard Riemann-Liouville differential operator of order  $\alpha$  and  $f:[0,1]\times[0,\infty)\to[0,\infty)$  is a given positive and continuous function. (Received January 23, 2007)