

On the Green's function for a fractional differential problem and a consequent result

Anabela Silva¹

¹Center for Research and Development in Mathematics and Applications (CIDMA), Department of Mathematics, University of Aveiro, Portugal

Corresponding/Presenting author: anabela.silva@ua.pt

Talk Abstract

The Fractional calculus is a branch of mathematics that studies the extension of the concepts of derivative and integral to an arbitrary order (necessarily fractional). This definition departs from the traditional concept of derivative and integral in a differential and integral calculus [1]. In this talk, a boundary value of the fractional type with the Riemann-Liouville derivative is presented. By obtaining a Green's function, the solution of the problem is described in terms of an integral equation. Studying its maximum value, we can obtain a Lyapunov-type inequality [2]. This result constitutes a necessary condition for the existence of non-trivial solutions for the boundary value problem under study. Inequalities of this type [3] are proved to have applications in various problems related to the theory of differential equations [4].

Keywords: fractional differential equation, Green's function, Lyapunov inequality, Riemann-Liouville derivative.

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