



Seminar

Systems and Control Group - CIDMA

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Departamento de Matemática, Universidade de Aveiro
Sala Sousa Pinto

Some results on regional optimal control problem for
fractional systems with control delay

Touria Karite

National School of Applied Sciences, Sidi Mohamed Ben Abdellah University, Fez, Morocco
touria.karite@usmba.ac.ma

Abstract

System analysis consists of studying a set of concepts allowing a better knowledge of its properties. Among these notions, there are controllability, observability, stability, stabilization, detectability, spreadability, and so forth. Fractional systems have been proven, with the development of science and technology, to be one of the most effective tools for modeling many phenomena related to physics, engineering and real-world problems. Therefore, research studies on fractional order calculus attract a lot of attention for these types of systems with several fractional derivatives. Adding to that the concept of regional controllability, this would be more interesting especially for researchers who work on applied problems. This concept appears while one is studying or treating a phenomena and maybe he is interested in some regions more than others. This notion has been introduced by El Jai et al. (1995) for parabolic linear systems. We will discuss here the regional controllability of fractional control systems with control delay using the classical Caputo derivative. We first give some preliminary results and we present the considered system and we present some obtained results.

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