

# **A CHARACTERIZATION OF THE LINEAR APPROXIMATION FOR THE NONLINEAR BICOMPARTMENTAL POLYNOMIAL SYSTEM: APPLICATION IN PARAMETERS IDENTIFICATION**

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## **ABSTRACT**

Applying of the linearization method in nonlinear polynomial bicompartmental systems raises a fundamental problem: the linear model obtained is not usually real. The presented work shows by means of the modified distance functional introduced by Y. Cherruault that it is possible to provide a characterization of a real system. A direct application of earlier works allows us to give an approximate identification to the nonlinear system.

**KEYWORDS:** Nonlinear Polynomial, Bicompartmental Systems