Application of an Intelligent Control on Economics Dynamic System Described by Differential Algebraic Equation as a New Management Strategy

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Abstract

In this paper, we explore the application of the robust control approach of Attractive Ellipsoid Methodology on a class of dynamic system described by Differential Algebraic Equations (DAE) in economics under the effect of bounded external disturbances. To achieve a specific economic goal we will design an integral management strategy which allows to minimize the size of the invariant attractive ellipsoid, associated with the dynamic system, with a good performance in the rejection of external disturbances. The right-hand side of DAE belongs to the given *Quasi-Lipschitz* classes and is compatible with several widely used techniques of linear approximation related to plant models. We can consider transformed problem instead of the original problem with respect to solvability and related questions.

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