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## عنوان مقاله:

Optimal Control of 2-Dimensional Systems: a New Approach

## محل انتشار:

بیستمین کنفرانس مهندسی برق ایران (سال: 1391)

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## خلاصه مقاله:

This paper suggests a new method of solving optimal control problem for General state space model of discrete twodimensional (2-D) systems which is called 2-DGM. This methodresolves the boundary conditions complexities in the 2-D optimal control problems, and also guarantees reduction ofcomputation compared to the other methods. In order to solve the standard 2-D LQR Problem, It is shown that the 2-D system under a specific quadratic performance index can be cast as anew semi-one-dimensional (semi-1-D) system. This semi-onedimensional system is called L-shaped model. The generalityof this method makes it usable for other 2-D models as well. Using a theorem and three conclusions in 1-D optimal controltheory, an algorithm is introduced to solve optimal control for 2- D systems. Finally, Simulation results are presented to illustrate the effectiveness of our proposed method

## کلمات کلیدی:

D Systems, Optimal control problem, General model-2

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