

عنوان مقاله:

Regulator and Tracking Systems Design for a Boiler System using Entire Eigenstructure Assignment

محل انتشار:

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خلاصه مقاله:

In powerplant engineering, control of dynamic variables such as drum pressure, steam temperature and water level of drum of a utility boiler is of great importance. In this paper, a linear time invariant (LTI) model of a boiler system is considered. The mentioned variables are considered as the output variables and feedwater mass rate, fuel mass rate and attemperator spray mass rate are considered as the input variables of utility boiler. Two kinds of feedback control systems are designed. Firstly, a regulator is designed such that the above variables are adjusted around a specified operating point and maintained in equilibrium against small disturbances. Second, a tracking system is designed such that the output variables track the command step input without steady state error. To achieve these goals, the controllers are designed based upon entire eigenstructure assignment. In this approach, by using a Matlab algorithm, optimum pair of eigenvalues and eigenvectors of dynamic system are designed such that the desire time responses of .output variables are achieved

کلمات کلیدی:

Utility Boiler- Multivariable System- Regulator Design- Tracking System- Entire Eigenstructure Assignment

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