Feedback Realization of Open Loop Diagonalizers

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Abstract: In this work the feedback realization of open loop diagonalizers (old) of a linear, time-invariant, multivariable system is considered. In the first part of the paper, the properties of old's which admit i) dynamic state feedback, ii) constant state feedback, iii) dynamic output feedback and iv) constant output feedback realization are investigated. Then, in the second part, dynamic (constant) output feedback decoupling problems are formulated as determining an open loop diagonalizer which admit the desired feedback realization. Finally, the solutions to these problems are obtained by determining the conditions of existence for such open loop diagonalizers.

Keywords:

AMS Subject Classification: