

Barbagli, Federico; Marro, Giovanni

The algebraic output feedback in the light of dual-lattice structures. (English) Zbl 1274.93099
Kybernetika 35, No. 6, 693-706 (1999).

Summary: The purpose of this paper is to derive constructive necessary and sufficient conditions for the problem of disturbance decoupling with algebraic output feedback. Necessary and sufficient conditions have also been derived for the same problem with internal stability. The same conditions have also been expressed by the use of invariant zeros. The main tool used is the dual-lattice structures introduced by [G. Basile and G. Marro, Controlled and conditioned invariants in linear system theory. Englewood Cliffs, NJ: Prentice-Hall International, Inc.. xiii, 464 p. (1992; Zbl 0758.93002)]

MSC:

93B52 Feedback control
93D15 Stabilization of systems by feedback

Cited in 5 Documents

Keywords:

algebraic output feedback control; disturbance decoupling; dual-lattice structures; algebraic output feedback

Full Text: [Link](#)

References:

- [1] Anderson B. D. O.: A note on transmission zeros of a transfer function matrix. IEEE Trans. Automat. Control 21 (1976), 589-591 · Zbl 0332.93025 · doi:10.1109/TAC.1976.1101268
- [2] Basile G., Marro G.: On the observability of linear time-invariant systems with unknown inputs. J. Optim. Theory Appl. 3 (1969), 6, 410-415 · Zbl 0165.10203 · doi:10.1007/BF00929356
- [3] Basile G., Marro G.: L'invarianza rispetto ai disturbi studiata nello spazio degli stati. Rendiconti della LXX Riunione Annuale AEI, paper 1-4-01, Rimini, Italy 1969
- [4] Basile G., Marro G.: Controlled and Conditioned Invariants in Linear System Theory. Prentice Hall, New Jersey 1992 · Zbl 0758.93002
- [5] Basile G., Marro G., Piazzoli A.: A new solution to the disturbance localization problem with stability and its dual. Proceedings of the '84 International AMSE Conference on Modelling and Simulation, Athens 1984, vol. 1, 2, pp. 19-27
- [6] Chen B. M.: Solvability conditions for disturbance decoupling problems with static measurement feedback. Internat. J. Control 68 (1976), 1, 51-60 · Zbl 0888.93028 · doi:10.1080/002071797223721
- [7] Imai H., Akashi H.: Disturbance localization and pole shifting by dynamic compensation. IEEE Trans. Automat. Control AC-26 (1981), 1, 226-235 · Zbl 0464.93045 · doi:10.1109/TAC.1981.1102550
- [8] Piazzoli A., Marro G.: The role of invariant zeros in multivariable system stability. Proceedings of the 1991 European Control Conference, Grenoble 1991 · Zbl 0778.93099
- [9] Rosenbrock H. H.: State-Space and Multivariable Theory. Wiley, New York 1970 · Zbl 0246.93010
- [10] Willems J. C., Commault C.: Disturbance decoupling by measurement feedback with stability or pole placement. SIAM J. Control Optim. 19 (1981), 4, 490-504 · Zbl 0467.93036 · doi:10.1137/0319029
- [11] Wonham W. M., Morse A. S.: Decoupling and pole assignment in linear multivariable systems: a geometric approach. SIAM J. Control 8 (1970), 1, 1-18 · Zbl 0206.16404 · doi:10.1137/0308001

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.