Disturbance Rejection by Proportional and Derivative Output Feedback

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Abstract: In this paper we take profit of the pole placement procedure using P. D. feedback and the proper approximation schemes of non proper laws (recently developed in [**?**] and [**?**]) for considering the rejection of some disturbance signal acting directly on the output of a given (A,B,C) system; it is well known that this problem has no proper solution. Our rejection scheme relies on the use of exact state reconstructor (based on some left inverse of the initial system): the idea is to reconstruct the state which would be present if the disturbance signal were not present and then, to use this ideal observer as a compensator in such a way that the actual (disturbed) state exactly matches the previous one; this implies that the corresponding output is unaffected by the disturbance. Simple illustrative examples are given and simulation results show the effect of the approximation of derivators in the control strategy.