APPLYING ORDER REDUCTION MODEL ALGORITHM FOR BALANCING CONTROL PROBLEMS OF TWO-WHEELED MOBILE ROBOT

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Development of balanced control for the two-wheeled mobile robot has attracted many researcher s in the recent years. One difficulty for this control problem is that the controlling object is always unstable and is affected by interferences. To solve this problem, the authors of the previous research offer use robust control algorithm H∞. However, the two-wheeled mobile robot balancing controller under H∞ robust control algorithms often has high order, complexity which will be significant when programming for controller and impact on quality in the process of factual control. This paper has proposed a new algorithm for reducing model orders in general and applying to reduce orders of controller in balance control of two-wheeled robot in particular. Proposed order reduction model algorithm can be applied in other fields such as digital signal processing.