

Abstract :

Most of industrial systems are described by complex mathematical models with high order dimensions, wherein control engineering is facing big challenges in designing robust controllers for such type of systems; the main difficulty lies in founding a control structure that is tractable for large scale systems without complicating the controller design from one side, and with preserving controller robustness from the other side. Our study is focused on designing robust controller for industrial systems with complex structure. The robustness of decentralized controller has been improved by using overlapping decomposition approach; the obtained controller has been applied to Web Winding system with longitudinal structure. The designed approach leads to more computational technique, thus to easy-implementable controllers. Moreover, simulation results are presented with different input signals so that the usefulness of the proposed approach can be generalized.