

Improved Relay Feedback Method Under Noisy and Disturbance Environment

박병언, 이시내, 유경환, 김경훈, 성수환*
경북대학교
(suwhansung@knu.ac.kr*)

The Relay feedback methods have been used to tune Proportional-Integral-Derivative controllers automatically in industry. To improve conventional relay feedback method, a relay feedback method using the integrals of the process input and output was proposed. The method shows better accuracy and advantages in obtaining the ultimate information of the process compared with previous approaches. But, it has poor accuracy under noisy and disturbance environment. So, in this article, we propose a new relay feedback method combining disturbance rejection and noise suppressing techniques to provide fairly accurate frequency response model by removing the effect of disturbances and noises in estimating frequency data on the basis of a new disturbance estimator and noise magnitude estimator.