

ABSTRACT

An alternative minimum variance self-tuning controller is presented. The proposed controller, which is designed to combine minimum variance strategy with Dahlin control, overcomes the drawbacks of the original version. It tracks set-point changes with the desired speed of response, penalizes the excessive control action, and can be applicable to non-minimum phase systems. The algorithm is extended to multi-variable systems. The pole-assignment method can be incorporated to enable closed-loop system stability characteristics to be readily specified. Simulated results are presented to indicate the advantages of the proposed controller.