

AMPLITUDE AND PHASE MARGIN SETTINGS WITH ON-LINE PI CONTROLLER

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ABSTRACT

In the paper a new autotuning algorithms for PI controllers, based on a modified relay excitation method, is proposed. The main idea of the modified algorithm is that a PI controller is permanently present in a closed-loop during a selftuning period. This modification successfully solves different problems which appear in a classical relay excitation method. Three different PI tuning methods, which achieve desired amplitude and phase margin, are presented. Two of them emerged as the most useful in practice. Experiments on laboratory set-ups show the effectiveness of the proposed tuning approach.