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ABSTRACT OF THE DISCLOSURE

Manipulated variable to be applied to process, and process variable are gathered by data gathering means. In modeling means which includes a process model internally, internal parameters thereof are adjusted so that an output of said process model may match with said process variable. Accuracy of the process model is calculated by estimation accuracy operating means. Said modeling means is started when said manipulated variable or said process variable changes larger than a fixed value, and control constants are derived from outputs of said modeling means and said estimation accuracy operating means. Gain constant of said process model is determined by the output of said process model and said process variable. For search method of said internal parameters, simplex method is used wherein length of component side which composes an initial polygon is made longer than sampling period of said data gathering means and simplex is remade at least once at the original coordinate when said parameters are settled by one time simplex method. At the beginning of control, step like manipulated variable is applied to process, and based upon the response of said process variable at this time, initial values of sampling period and control constants are obtained.

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