Matter-Element Modeling of Parallel Structure and Application about Extension PID Control System

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摘要　　This article describes in detail a new method via the extension predictable algorithm of the matter-element model of parallel structure tuning the parameters of the extension PID controller. In comparison with fuzzy and extension PID controllers, the proposed extension PID predictable controller shows higher control gains when system states are away from equilibrium, and retains a lower profile of control signals at the same time. Consequently, better control performance is achieved. Through the proposed tuning formula, the weighting factors of an extension-logic predictable controller can be systematically selected according to the control plant. An experimental example through industrial field data and site engineers' experience demonstrates the superior performance of the proposed controller over the fuzzy controller.

关键词　　Extension control system, matter modeling, parallel structure, PID predictable algorithm

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Key words   Extension control system   matter modeling   parallel structure   PID predictable algorithm

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