Optimized PID control of depth of hypnosis in anesthesia

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Highlights

- This paper deals with the use of proportional-integral-derivative controllers for the closed-loop control of the depth of hypnosis in anesthesia by using propofol administration and the bispectral index as a controlled variable.
- The controller parameters are optimized by using genetic algorithms and it is shown that a gain scheduling strategy should be employed to address the induction and maintenance phases separately.
- The selection of the filter on the controller output is also considered and the trade-off between the performance and the noise effect in the control variable is analyzed.