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Title: Explicit Hybrid Model Predictive Control Strategies for Intravenous Anaesthesia

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- A nominal hybrid explicit/multiparametric MPC structure was developed based on a piece-wise affine approximation of the intravenous anaesthesia model, which efficiently addresses the nonlinearity of the Hill curve.
- Simultaneous hybrid mp-MPC and multiparametric moving horizon strategy was developed and implemented for the intravenous anaesthesia process.
- Robust hybrid mp-MPC strategies were developed and simultaneously implemented and tested for the intravenous anaesthesia process.
- The developed strategies successfully address two of the main challenges in the control of the intravenous depth of anaesthesia: nonlinearity and inter-and intra- patient variability.

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