



Residual Generator Based Measurement of Current Input Into a Cell

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Abstract: We address the problem of real-time estimation of the excitation current into a cell. The membrane voltages can be measured experimentally, even in vivo. On the other hand, a direct measurement of the current into a cell interferes with the voltage activity. We propose a method to estimate the current input into a cell using the measured voltage and an observer based residual generator scheme. Our approach can be applied to all cell models of the Hodgkin-Huxley type.

Keywords: *cell models; observer; residual generator; nonlinear control.*

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