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## عنوان مقاله:

An indirect adaptive neuro-fuzzy speed control of induction motors

## محل انتشار:

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## خلاصه مقاله:

This paper presents an indirect adaptive system based on neuro-fuzzy approximators for the speed control of induction motors. The uncertainty including parametric variations, the external load disturbance and unmodeled dynamics is estimated and compensated by designing neuro-fuzzy systems. The contribution of this paper is presenting a stability analysis for neuro-fuzzy speed control of induction motors. The online training of the neuro-fuzzy systems is based on the Lyapunov stability analysis and the reconstruction errors of the neuro-fuzzy systems are compensated in order to guarantee the asymptotic convergence of the speed tracking error. Moreover, to improve the control system performance and reduce the chattering, a PI structure is used to produce the input of the neuro-fuzzy systems. Finally, simulation results verify high performance characteristics and robustness of the proposed control system against plant parameter variation, external load and input voltage disturbance.

## کلمات کلیدی:

indirect adaptive control, neuro-fuzzy approximators, uncertainty estimation, Stability analysis, reconstruction error

## لینک ثابت مقاله در پایگاه سیویلیکا:

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