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Predictive control of power converters

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Power converters feedback control has delay for working of reference value error. Employment of predictive control allows reduce time of transient process, decrease accuracy in steady state and eliminate of overshoot are proposed. Theoretical and practical principles of predict control power converters with wide range changing load are developed. For practice realisation discrete models for prognosis state variables, methodologies disturbances detection, starting condition calculation are proposed. Converter continuous model, which is derived from discrete model on basis z-transform, for stabilization output voltage are used.

[1] Arbetter B., Maksimovic, D. Feedforward Pulse Width Modulator for Switching Power Converters. IEEE Transactions on Power Electronics, Vol. 12, No. 2, March, 1997.