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Increasing energy efficiency of asynchronous electric drive control by Takagi-Sugeno method (Conference Paper)

Zaytseva, N.M. ✉

Innovative Eurasian University, Kazakhstan, Kazakhstan

Краткое описание

Просмотр пристатейных ссылок (20)

The article is devoted to development of the control models for asynchronous electric drives. The modern microprocessor technique allows realizing any algorithm of electric drive functioning, therefore, there is a search capability of new control algorithms asynchronous electric drives with the criterion increase in their energy efficiency. The work offers scalar and vector type control models based on one of the artificial intelligence areas: fuzzy logic. In case of a scalar type control modeling, the cos range of values of the membership function was selected as one of the the integral parameters of the electric drive energy efficiency. A mathematical model of an electric drive was considered in case of vector control for an asynchronous electric drive taking into account non-linearity of its magnetization response. The algorithm implementing saturation of the drive magnetic system was made using the Takagi-Sugeno fuzzy inference. © 2018 IEEE.

Важность темы SciVal

Тема: Induction motors | Electric drives | motor drives

Процентиль важности: 48.798

Ключевые слова автора

- asynchronous electric drive
- fuzzy inference
- fuzzy logic
- magnetic system saturation
- membership functions
- scalar and vector control

Включенные в указатель ключевые слова

Engineering controlled terms: Computer circuits Electric drives Electric machine theory Energy efficiency Fuzzy inference Fuzzy logic Inference engines Membership functions

Engineering uncontrolled terms Asynchronous electric drive Control model Integral parameters Magnetic system Magnetization response Modern microprocessor Search capabilities Takagi-sugeno

Engineering main heading: Vector control (Electric machinery)

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🔗 Zaytseva, N.M.; Innovative Eurasian University, Kazakhstan, Kazakhstan; эл. почта: zaitzevns@mail.ru
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