

论文

一种绕线转子感应电机控制的新方法

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摘要:

介绍感应电机特点的基础上,提出一种基于转子电磁场考虑的无位置传感器的绕线转子感应电机控制的新方法.该控制方法基于轴坐标变换,可以从任意点开始,无需知道电机的起始位置,其优点是更加直接,减少了计算对电机参数的依赖性.对应零转子频率,电机在同步速度附近可以提供稳定的运行,适应于变化的频率和速度,尤其对在受限制的速度范围内实现变速恒频具有重要意义.从仿真与试验的结果看,该方法与其它方法相比具有多种优势.

关键词: 感应电机 无位置传感器控制 转子侧控制 恒频率运行

A new method for the control of a wound-rotor induction machine

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Abstract:

The principle and characteristics of the induction machine were introduced. A position-sensorless method for rotor-side field-oriented control of a wound-rotor induction machine was described. The control algorithm is based on axis transformations. The control algorithm can be started on the fly without knowledge of the initial rotor position. This method is more direct, and dependence on machine parameters was also largely reduced. The operation at synchronous speed is stable, corresponding to zero rotor frequency and is suitable for variable speed constant frequency operations. Rotor-side control of a wound-rotor induction machine is very attractive for variable speed constant frequency applications with limited speed range. Simulation and experimental results show excellent performance of the scheme.

Keywords: induction machine control of position-sensorless control of rotor side variable speed constant-frequency operation

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