Patent Search

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Abstract:

THE PERFORMANCE OF SWITCHED-RELUCTANCE MOTORS FOR ELECTRIC VEHICLE APPLICATIONS CAN BE SIGNIFICANTLY IMPROVED BY IMPLEMENTING PREDICTIVE C CONTROL ABSTRACT: In the big data environment, we develop personalized information of college libraries based on big data from three aspects: the overall architec system model, the functional model of the system, and the design of system interface modules according to the design principles and requirements of the personaliz information service system of the university library Service system design. In terms of the functional design of the platform, the service platform is divided into four le accurate identification of user needs based on big data, personalized customized services based on artificial intelligence, academic research and discussion space bas integrated media, and fine-grained subject resource aggregation based on knowledge. On this basis, a centralized model of individualized services of university librar internal and external personnel, information resources, technology, services, processes, platforms, and environment has been constructed Artificial intelligence (AI) is emerging trends and applications of computing in libraries. It involves programming computers to do things, which if done by humans, would be said to require intell ultimate promise of artificial intelligence in libraries is to develop computer systems or machines that think, behave, and in fact rival human intelligence, and this clea major implications on librarianship. The application of artificial intelligence in the library has become pervasive. They include expert systems for reference services, b and shelf-reading robots, virtual reality for immersive learning among others. Although the incorporation of artificial intelligence in libraries can be perceived to alien from their users, it will probably help libraries do more rather than taking over the jobs of librarians. It will enhance their services delivery. Artificial intelligence will gr improve library operations and services and will upgrade and heighten the relevance of libraries in an ever-changing digital society In recent years, there has been co interest in the unipolar sinusoidal current excited control strategy of the switching reluctance motor (SRM). This is a result of its expansive driving area and capacity to torque disturbance. Traditional vector control methods have difficulty achieving high levels of current control performance because the SRM is dynamic, nonlinear, ar interconnected. This article describes a new method for controlling vectors that employs a two-degree-of-freedom internal model control. This information will have t bearing on the control's precision and the system's durability. When a simplified SRM model of the system is constructed to account for the system's nonlinearities in reference frame, the stability of the controller is evaluated. When the 2DOF IMC is utilised with fixed filter parameters, the fluctuating disturbance cannot be eliminat achieve this, an adaptive disturbance observer is added to the inner-loop system in order to estimate the disturbance in real time and eradicate it. This is done to ens everything operates correctly. Adjustments are made to the adaptation gain rule to ensure the ADO is stable and converges, and a Lyapunov-based stability analysis i provided. The efficacy of the proposed control approach is then demonstrated through experiments. The findings suggest that the strategy may enhance the ability o to control and disregard disturbances. The tests also demonstrate that the proposed control method is effective.

Complete Specification

Description:DESCRIPTIONS:
Switched reluctance motors are acquiring popularity due to their durability, high starting torque, and dependability under adverse conditions. These motors have b utilised in a variety of applications, including electric vehicles, wind turbines, the textile industry, and others. However, the design and method of power supply caus ripple in the torque, making industrial use problematic. Torque ripple is effectively reduced by torque share functions, direct torque control, direct instantaneous co and model predictive control. This sequence of actions improves the controller's tracking, which is one of the most effective methods for minimising force output disturbance. However, there are still issues that must be resolved before these methods can be implemented. It is difficult to ascertain the accuracy of the torque m which has a direct bearing on the effectiveness of torque ripple reduction. However, these methods require simultaneous optimisation of the turn-on angle, turn-of and slicing level, making parameter tuning significantly more difficult. Current vector control that does not require the development of complex torque models is pr to these other methods. Due to these benefits, the electric apparatus industry is beginning to take notice. Controlling the current in the dq0-axes, SRM employs a cu vector control method based on a hysteresis controller. The maximal torque per ampere control method is selected to reduce negative torque further. Also utilised current loop is the hysteresis controller. This controller is dictated by the current vector. The primary distinction between these two types of controllers is that hyste controllers are used to calculate the voltage space vector for the subsequent control period. To further level the force, a third harmonic current is added to the zero sequence reference current. Numerous tests have demonstrated that this strategy is effective, proving its viability. Multiple switching frequencies of the hysteresis controller, on the other hand, generate a great deal of electromagnetic interference and current disturbance. To monitor the reference current in a rotating referen frame, a typical PI controller with a fixed switching frequency is utilised. This controller is predicated on vector movement. Additionally, space vector modulation tec

View Application Status