

عنوان مقاله:

Step and Search Control Method to Maximum Power Point Tracking of PMSG Wind Generator

محل انتشار:

اولین کنفرانس بین المللی دستاوردهای نوین پژوهشی در مهندسی برق و کامپیوتر (سال: 1395)

تعداد صفحات اصل مقاله: 12

نویسندگان:

Khalil Valipour - College of Engineering University of Mohaghegh Ardabili Ardabil, Iran

Reza Najafi - College of Engineering University of Mohaghegh Ardabili Ardabil, Iran

Elyas Kesalaei - College of Engineering University of Mohaghegh Ardabili Ardabil, Iran

خلاصه مقاله:

at the moment the position of the renewableenergy is so important because of the environment pollution andthe limitation of fossil fuels in world. Energy can be generatedmore and more by the renewable sources, but the fossil fuels arenonrenewable. One of the most important renewable sources isthe wind energy. The wind energy is an appropriate alternativesource of fossil fuel. The replacement rate of renewable energy tofossil fuels is rising, although the production cost is above fossilfuels. To further reduce cost of wind production, many methodshave been proposed. One of the appropriate methods is themaximum power point tracking strategy. In this paper, tip speedratio control is first applied for maximum power point tracking.Then, speed sensor less algorithm is used to avoid themeasurement of actual values. And TSR control is still used totest the estimate accuracy. Based on the two methods, fuzzybased hill climbing method is designed. The computersimulations with a 8 KW wind power generation system areperformed. The results of simulation from the proposed controlmethod are compared with those obtained using the two existingmethods. The proposed method generally outperformed the twoexisting methods, especially when the operating point is far awayfrom the maximum point. The control method also has similarstable characteristic when the operating point is close to the peakpoint in comparison with existing methods. The proposed fuzzymethod is .computationally efficient and can be easilyimplemented in real-time

کلمات کلیدی:

wind turbine system; MPPT; TSR; fuzzy control; speed sensor less control

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/496547>

