

## عنوان مقاله:

مقایسه روشهای کنترل مبدل سمت ماشین در توربین-ژنراتور بادی مبدل کامل با ژنراتور سنکرون مغناطیس دائم

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تعداد صفحات اصل مقاله: 13

## نویسندگان:

M. Rahimi - Faculty of Electrical and Computer Engineering, University of Kashan, Kashan, Iran

A. Haghi - Faculty of Electrical and Computer Engineering, University of Kashan, Kashan, Iran

M. Belali - Faculty of Electrical and Computer Engineering, University of Kashan, Kashan, Iran

## خلاصه مقاله:

Wind turbine-generators shaft is relatively soft and wind turbine mechanical systems is usually represented as two mass model. Two mass model contains torsional oscillatory modes that may be excited under wind speed variations and grid fault conditions. In this state, torsional oscillations may appear on the output responses of the wind turbine-generator. PMSG based WTs include two converters: machine side converter (MSC) and grid side converter (GSC). The main function of the GSC is the dc-link voltage regulation. Also, the MSC is used to control the generator speed or active power, and thus the control of the generator is mainly carried out by the MSC. There are different strategies for the control of MSC. The purpose of this paper is to study different control strategies of the MSC in the PMSG based WTs. These control strategies include turbine-generator control in speed control mode, power control mode or optimum tip speed ratio mode. Then, performance of the WT by using the mentioned control strategies against wind speed changes, aerodynamic power fluctuations due to tower shadow effect and grid voltage dip is examined and compared. Next, by modifying the MSC control, the wind turbine response is improved.

## کلمات کلیدی:

Permanent magnet synchronous turbine-generator, shaft torsional torque oscillations, machine side converter control, speed control, tower shadow

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/966360>

