عنوان مقاله:

A Sensor less MPPT technique for direct-drive PMSG wind turbines

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خلاصه مقاله:

This paper proposes a sensorless maximum power point tracking (MPPT) algorithm for direct-drive permanent magnet synchronous generator (PMSG) wind turbines which are controlled by a space-vector modulation-direct torque control (SVM-DTC) method. The algorithms uses a combination of optimal torque (OT) method and perturb and observe (P&O) to produce an accurate optimal torque reference according to wind speed variations to achieve the MPPT control of the WTG without measuring the wind speed. The effectiveness of the proposed MPPT algorithm is verified by Matlab simulation results on a 1.5-MW direct-drive, low speed, and multipole PMSG wind turbine

کلمات کلیدی:

maximum power point tracking (MPPT), permanent magnet synchronous generator (PMSG), direct-drive PMSG wind turbine, space-vector modulation-direct torque control (SVM-DTC), optimal torque (OT), perturb and observe (P&O), (Wind energy conversion system (WECS