

## عنوان مقاله:

Improving DFIG based wind turbine efficiency by using optimal placement of SSR damping controller and sliding mode control

## محل انتشار:

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## خلاصه مقاله:

nowadays the doubly fed induction generators are widely used as variable speed wind turbine topology. The operation of series capacitive compensation increases the risk of sub-synchronous resonance. The SSR is occurred when the DFIG wind farm delivers energy to the grid at one or more natural frequencies. In order to prevent occurrence of such frequencies, control strategies should be implemented. In this paper a method of SSR damping control and optimal placement of Rotor side converter and grid side converter of series compensated DFIG wind farm is proposed. SSR damping controller is based on the residue method. Moreover the converters are improved by using sliding mode controller. It is aimed to decrease the torque and reactive power oscillations and stabilize the dc link voltage. Simulation results proved that the grid side converter is the optimal place for SSR damping controller implementation. Moreover the best control signal is the capacitor voltage

## کلمات کلیدی:

SSR, SMC, DFIG, damping controller

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/744580>

