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Dynamic modelling and design of various robust sliding mode controls for the wind turbine with estimation of wind speed

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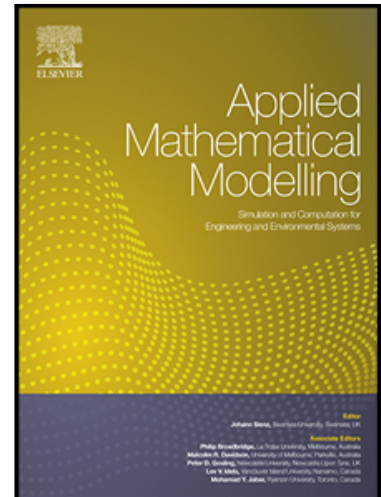
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Highlights

- Deriving power coefficient of WindPACT 1.5MW wind turbine by FAST & WT-PERF software
- Estimation of wind speed based on ANFIS while training data is obtained by using FAST
- Design & comparison of various sliding mode controls (SMC) to obtain maximum power
- Control of doubly fed induction generator (DFIG) for tracking reference torque
- Robust performance of the high order SMC in the presence of model uncertainties

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