

Personal Introduction

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Research areas

- Modeling, Analysis and Stability Control of Power System interconnected the large –scale Wind Generation
- Electricity Market
- Low-carbon Electricity

Ongoing collaborative project

- **Research on Theory and Method of Load Margin Analysis Considering the Multiple Uncertainty under the Low-carbon Electricity** , National Nature Science Foundation of China (No. 51277015),2013-2016
 - 1.To develop new models of power injections of generation and load considering the stochastic and fuzzy multi-uncertainty
 2. To develop an approach of the maximum load margin of power system considering multiple uncertainty under low-carbon electricity Environment
 3. Maximum load margin ,Energy conservation and Emission reduction for Lower-carbon power system by Mutli-objective optimal model considering the multi-uncertainty power injection

Research Progress

1. The math model of large-scale wind farm is constructed considering the multi-uncertain characteristic of wind speed.
2. An analysis method on carbon emission flow of power system with stochastic and intermittent wind power injection has been studied.
3. An algorithm of constructing the tangent planes of Static Voltage Stability Security Region considering Uncertain power injection of DFIG wind farms is deduced to study the load margin of power system.
4. Power flow analysis of power grid connected with wind farms based on state transition is studied .
5. A novel dispatch planning of the power system considering the stochastic and fuzzy characteristics of large-scale wind power has been proposed

Some Publications

- [1] **Rui Ma**, Shulin Yuan, Zeyu Qin. Analysis on Carbon Emission Flow of Power System with Uncertain Wind Generator Injection [J]. Automation of Electric Power Systems, 2014.(Accepted)
- [2] Zeyu Qin, **Rui Ma**. Research on Voltage Stability Region Tangent Plane of Power System with Doubly-Fed Induction Generator Wind Farm[C]. 2014. (Accepted by the 2014 IEEE Power & Energy Society General Meeting)
- [3] **Rui Ma**, Ren Kang, Bin Luo, et al. An Improved Principal Component Analysis Based Recognition Method for Energy Consumption Characteristics of Thermal Generation Unit [J]. Power System Technology, 2013, 37(05): 1196-1201.
- [4] Qiwei Wang, Feijiang, **Rui Ma**, et al. Power Flow Analysis of Power Grid Connected With Wind Farms Based on State Transition [J]. Power System Technology, 2013, 37(07): 1880-1886.
- [5] **Rui Ma**, Ren Kang, Fei Jiang, et al. Multi-Objective Dispatch Planning of Power System Considering the Stochastic and Fuzzy Wind Power [J]. Power System Protection and Control, 2013, 41(01): 150-156.