

Wide Area Monitoring, Protection and Control

Open Invited Track proposal

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Abstract :

With the increased installation of mainly uncontrolled renewable energy sources the operation of interconnected electrical networks is becoming more and more difficult. Problems can arise in the field of inter-area oscillations, frequency stability, uncontrolled transit load flows, voltage quality and reliable supply of consumers. These new challenges can be handled by improved technologies like Wide Area Monitoring for problem detection, advanced Protection schemes and improved Control of the overall system including the renewable sources.

IFAC Technical committee: IFAC technical committee for evaluation : TC 6.3.

Brief description :

With the increased installation of mainly uncontrolled renewable energy sources the operation of interconnected electrical networks are becoming a challenge in the future. In smaller networks like the network of Ireland the increase of production of electrical power from wind farms together with the reduction of operating conventional power plants resulted in beginning instability of the frequency because of loss of rotating masses in the system. But also inter-area oscillations, frequency stability, uncontrolled transit load flows, voltage quality and reliable supply of consumers are emerging problems concerning the transition of the energy systems in the future. Therefore this Open Invited Track has to address these well known influences and to describe solutions for these still open problems. So topics like virtual rotating masses, virtual power plants, active and reactive power control from renewable sources, phase shifting transformers and network stabilisation proposals are of interest.