

## **Large Scale Wind Power Integration in Power Systems: Modelling and Stability Aspects with Applications**

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This lecture will present the basic factors affecting the integration of large amounts of Wind Generation (WG) in a Power System from the point of view of system stability and security. A short introduction to power system stability will be given first. Then the basic modelling aspects of wind turbine generators both for simple induction generators and doubly fed asynchronous generators (DFAG), as well as full converter synchronous generators (FCSG) will be presented. The stability of DFAG controls and how they can interact with electromechanical oscillations will be discussed. Aspects of WG model aggregation and the assessment of fault ride-through capability will follow. Finally, case studies pertaining to future large scale wind integration to the Hellenic Interconnected Power System will be presented.