20th National Power Systems Conference

NPSC - 2018

Keynote Address – IV

Advanced Control Centre Applications using PMU Measurements

By
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Abstract

Phasor measurement units (PMUs) offer the advantages of high reporting rate, increased accuracy, and direct measurement of the phase angles. With growing number of PMUs in modern power systems, various applications are being developed for the energy management control center for enhanced monitoring, control, and protection of power grids. This talk will focus on some of the selected applications, including state estimation, stability assessment and control, and load modelling of power systems. Development of enhanced static and dynamic estimators using PMU-only, and hybrid measurement configurations will be discussed. Use of synchro phasors for voltage, frequency, and angle stability monitoring will be illustrated. The talk will also include measurement-based modelling of aggregate loads. Basic methodologies for load modelling under large and small, balanced and unbalanced, disturbances will be presented.

Biography

Dr. S. Chakrabarti completed his PhD in Electrical Engineering from Memorial University of Newfoundland, Canada in 2006. Before completing PhD, he worked in Asea Brown Boveri (ABB) Limited, India, and Bhabha Atomic Research Centre, India. After completing PhD, he worked as a Special Scientist in University of Cyprus, Cyprus, and first as a Research Associate and then as a Lecturer in Queensland University of Technology, Brisbane, Australia. Since 2009, he has been working in the Department of Electrical Engineering, Indian Institute of Technology, Kanpur, India, where he is currently a Professor.

His research interests are in the areas of power system state estimation, power system dynamics and stability, modelling of power system loads, smart grid, microgrid. He is a senior member of the IEEE, USA.