

## Documents

El-Mezyani, T., Srivastava, S.K., Cartes, D.A., Dustegor, D.

**Sensor optimization and placement for enhanced power system monitoring using entropy**

(2011) *2011 IEEE Electric Ship Technologies Symposium, ESTS 2011*, art. no. 5770864, pp. 187-192.

**Abstract**

In this paper we propose a new methodology for sensor optimization and placement in a power system. The objectives of this study are to identify basic concepts on sensor optimization and placements to enhance the reliability and for efficient sensor data collection, processing, and transmission. Two approaches based on automatic control and information theory have been proposed. Condition of observability and fault detectability and isolability is developed to determine the optimal number of sensors and to determine the set of candidate sensors necessary for state estimation and fault detection and isolation. An entropy-based heuristic is proposed for the selection of the best sensors candidate that increases the information gain, thereby decreasing the drawback of system complexity and information uncertainty. © 2011 IEEE.

2-s2.0-79958261188

**Document Type:** Conference Paper

**Publication Stage:** Final

**Source:** Scopus