

Principal Component Analysis Applied to the Electric Power Systems - Practical Guide; Practical Guide for Algorithms

Authors : John Morales, Eduardo Orduña

Abstract : Currently the Principal Component Analysis (PCA) theory has been used to develop algorithms regarding to Electric Power Systems (EPS). In this context, this paper presents a practical tutorial of this technique detailed their concept, on-line and off-line mathematical foundations, which are necessary and desirables in EPS algorithms. Thus, features of their eigenvectors which are very useful to real-time process are explained, showing how it is possible to select these parameters through a direct optimization. On the other hand, in this work in order to show the application of PCA to off-line and on-line signals, an example step to step using Matlab commands is presented. Finally, a list of different approaches using PCA is presented, and some works which could be analyzed using this tutorial are presented.

Keywords : practical guide; on-line; off-line, algorithms, faults

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020