



# Power System State Estimation: Theory and Implementation (Power Engineering (Willis))

By Ali Abur, Antonio Gómez Expósito

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Offering an up-to-date account of the strategies utilized in state estimation of electric power systems, this text provides a broad overview of power system operation and the role of state estimation in overall energy management. It uses an abundance of examples, models, tables, and guidelines to clearly examine new aspects of state estimation, the testing of network observability, and methods to assure computational efficiency.

Includes numerous tutorial examples that fully analyze problems posed by the inclusion of current measurements in existing state estimators and illustrate practical solutions to these challenges.

Written by two expert researchers in the field, Power System State Estimation extensively details topics never before covered in depth in any other text, including novel robust state estimation methods, estimation of parameter and topology errors, and the use of ampere measurements for state estimation. It introduces various methods and computational issues involved in the formulation and implementation of the weighted least squares (WLS) approach, presents statistical tests for the detection and identification of bad data in system measurements, and reveals alternative topological and numerical formulations for the network observability problem.

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### **Editorial Review**

#### **Review**

This is a comprehensive book on state estimation intended for students and practitioners in power engineering. It is also of high interest for applied mathematicians working in statistics and operations research. Easy-to-read and enjoyable... the book is well structured and most theoretical developments are illustrated with insightful examples, State-of-the-art developments as well as historical references are provided. Certainly, this book constitutes a fundamental addition to the state estimation literature by two well-known experts on the subject.

- IEEE Power & Energy Magazine, Vol. 3, No. 2, March/April 2005

...brings a fresh perspective to the problem of state estimation...offers a blend of theory and mathematical rigor that is unique and very exciting.

-- Fernando L. Alvarado, The University of Wisconsin, Madison, Wisconsin, USA

Throughout the book, the principles being explained are illustrated with exceptionally clear line drawings, appropriate mathematical formulations and with a large number of excellent scanning electron micrographs. ...The book provides an excellent reference for materials engineers and designers who may be confronted with wear problems in design. It would also serve as a graduate or senior-level text in a materials science course on wear.

-Richard D. Waltein, P.E., JOM On-Line, Jan. 2006

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##### **Neil Myers:**

Have you spare time for any day? What do you do when you have far more or little spare time? That's why, you can choose the suitable activity with regard to spend your time. Any person spent their spare time to take a stroll, shopping, or went to the actual Mall. How about open or maybe read a book eligible Power System State Estimation: Theory and Implementation (Power Engineering (Willis))? Maybe it is being best activity for you. You recognize beside you can spend your time along with your favorite's book, you can more intelligent than before. Do you agree with it has the opinion or you have other opinion?

##### **Jerry Hull:**

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to you.

**Charles Frye:**

A lot of people always spent all their free time to vacation as well as go to the outside with them family or their friend. Were you aware? Many a lot of people spent they will free time just watching TV, or maybe playing video games all day long. If you need to try to find a new activity here is look different you can read some sort of book. It is really fun for you. If you enjoy the book that you simply read you can spent all day every day to reading a publication. The book Power System State Estimation: Theory and Implementation (Power Engineering (Willis)) it is extremely good to read. There are a lot of folks that recommended this book. These people were enjoying reading this book. When you did not have enough space to bring this book you can buy often the e-book. You can m0ore easily to read this book out of your smart phone. The price is not very costly but this book has high quality.

**Judy Yelle:**

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