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Titolo	Advanced Optimization Methods and Big Data Applications in Energy Demand Forecast
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Sommario/riassunto	The use of data collectors in energy systems is growing more and more. For example, smart sensors are now widely used in energy production and energy consumption systems. This implies that huge amounts of data are generated and need to be analyzed in order to extract useful insights from them. Such big data give rise to a number of opportunities and challenges for informed decision making. In recent years, researchers have been working very actively in order to come up with effective and powerful techniques in order to deal with the huge amount of data available. Such approaches can be used in the context of energy production and consumption considering the amount of data produced by all samples and measurements, as well as including many additional features. With them, automated machine learning methods for extracting relevant patterns, high-performance computing, or data visualization are being successfully applied to energy demand forecasting. In light of the above, this Special Issue collects the latest research on relevant topics, in particular in energy demand forecasts, and the use of advanced optimization methods and big data techniques. Here, by energy, we mean any kind of energy, e.g., electrical, solar, microwave, or wind

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Autore	Parkkinen Veli-Pekka
Titolo	Evaluating Evidence of Mechanisms in Medicine : Principles and Procedures / / by Veli-Pekka Parkkinen, Christian Wallmann, Michael Wilde, Brendan Clarke, Phyllis Illari, Michael P Kelly, Charles Norell, Federica Russo, Beth Shaw, Jon Williamson
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Nota di contenuto	1 Introduction -- 1.1 What is a mechanism? -- 1.2 Where does evidence of a mechanism come from? -- 1.3 Why consider evidence of mechanisms? -- 1.3.1 Evaluating efficacy -- 1.3.2 Evaluating external validity -- 1.3.3 Other questions -- 1.3.4 Importance of considering evidence of mechanisms -- 2 How to consider evidence of mechanisms: a summary -- 2.1 Questions to address -- 2.2 Quality level of evidence and status of claim -- 2.3 Identifying evidence of mechanisms in the literature -- 2.4 Evaluating evidence of mechanisms -- 2.5 Using evidence of mechanisms to evaluate causal claims -- 2.6 Overall approach -- 3 Identifying evidence of mechanisms in the literature -- 3.1 Hypothesize a mechanism -- 3.2 Search the literature -- 3.3 Identify the evidence most relevant to the mechanism hypothesis -- 3.4 Presenting the evidence of mechanisms -- 4 Evaluating evidence of mechanisms -- 4.1 Considerations for evaluating evidence of mechanism -- 4.2 Presenting quality of evidence of mechanisms -- 5 Using evidence of mechanisms to evaluate efficacy and external validity -- 5.1 Efficacy -- 5.2 External validity -- 6 Glossary -- 7 References --

8 Acknowledgements -- 9 Appendix A. A critical appraisal tool for evidence of mechanisms -- 10 Appendix B. GRADE tables with mechanism assessment -- 11 Appendix C: Databases for evidence of mechanisms -- 12 Appendix D: Assessing exposures -- 12.1 Example: carcinogenicity of benzo[a]pyrene -- 12.2 Comparison to IARC -- 12.3 Molecular epidemiology -- 12.4 Comparison to SYRINA.

Sommario/riassunto

This book is open access under a CC BY license. This book is the first to develop explicit methods for evaluating evidence of mechanisms in the field of medicine. It explains why it can be important to make this evidence explicit, and describes how to take such evidence into account in the evidence appraisal process. In addition, it develops procedures for seeking evidence of mechanisms, for evaluating evidence of mechanisms, and for combining this evaluation with evidence of association in order to yield an overall assessment of effectiveness. Evidence-based medicine seeks to achieve improved health outcomes by making evidence explicit and by developing explicit methods for evaluating it. To date, evidence-based medicine has largely focused on evidence of association produced by clinical studies. As such, it has tended to overlook evidence of pathophysiological mechanisms and evidence of the mechanisms of action of interventions. The book offers a useful guide for all those whose work involves evaluating evidence in the health sciences, including those who need to determine the effectiveness of health interventions and those who need to ascertain the effects of environmental exposures.