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Soggetti	Geography - Mathematics Statistics Energy policy Algorithms Electric power production Mathematics of Planet Earth Statistical Theory and Methods Energy Policy, Economics and Management Electrical Power Engineering Mechanical Power Engineering
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Nota di contenuto	Preface -- Introduction -- Short Term Load Forecasting -- Extreme Value Theory -- Extreme Value Statistics -- Case Study -- References -- Index.
Sommario/riassunto	The overarching aim of this open access book is to present self-contained theory and algorithms for investigation and prediction of electric demand peaks. A cross-section of popular demand forecasting algorithms from statistics, machine learning and mathematics is presented, followed by extreme value theory techniques with examples. In order to achieve carbon targets, good forecasts of peaks are essential. For instance, shifting demand or charging battery depends on correct demand predictions in time. Majority of forecasting

algorithms historically were focused on average load prediction. In order to model the peaks, methods from extreme value theory are applied. This allows us to study extremes without making any assumption on the central parts of demand distribution and to predict beyond the range of available data. While applied on individual loads, the techniques described in this book can be extended naturally to substations, or to commercial settings. Extreme value theory techniques presented can be also used across other disciplines, for example for predicting heavy rainfalls, wind speed, solar radiation and extreme weather events. The book is intended for students, academics, engineers and professionals that are interested in short term load prediction, energy data analytics, battery control, demand side response and data science in general. .

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