1. Record Nr. UNINA9910465896303321 Autore Goos Peter **Titolo** Optimal Design of Experiments [[electronic resource]]: A Case Study Approach Hoboken,: Wiley, 2011 Pubbl/distr/stampa **ISBN** 1-119-97616-2 Descrizione fisica 1 online resource (305 p.) Altri autori (Persone) **JonesBradley** 670.285 Disciplina Soggetti Experimental design -- Data processing Industrial engineering -- Case studies Industrial engineering -- Experiments -- Computer-aided design Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di contenuto Optimal Design of Experiments: A Case Study Approach; Contents: Preface: Acknowledgments: 1 A simple comparative experiment: 1.1 Key concepts: 1.2 The setup of a comparative experiment: 1.3 Summary; 2 An optimal screening experiment; 2.1 Key concepts; 2.2 Case: an extraction experiment; 2.2.1 Problem and design; 2.2.2 Data analysis; 2.3 Peek into the black box; 2.3.1 Main-effects models; 2.3.2 Models with two-factor interaction effects: 2.3.3 Factor scaling: 2.3.4 Ordinary least squares estimation; 2.3.5 Significance tests and statistical power calculations; 2.3.6 Variance inflation 2.3.7 Aliasing2.3.8 Optimal design; 2.3.9 Generating optimal experimental designs; 2.3.10 The extraction experiment revisited; 2.3.11 Principles of successful screening: sparsity, hierarchy, and heredity; 2.4 Background reading; 2.4.1 Screening; 2.4.2 Algorithms for finding optimal designs; 2.5 Summary; 3 Adding runs to a screening experiment; 3.1 Key concepts; 3.2 Case: an augmented extraction

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## Sommario/riassunto

<i>"This is an engaging and informative book on the modern practice of experimental design. The authors' writing style is entertaining, the consulting dialogs are extremely enjoyable, and the technical material is presented brilliantly but not overwhelmingly. The book is a joy to read. Everyone who practices or teaches DOE should read this book."" - </i> <b>Douglas C. Montgomery</b>, <b>Regents Professor, Department of Industrial Engineering, Arizona State University</b> <i>""It's been said: 'Design for the experiment, don't experiment for the design.' This book ably demonstrates this notion