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Nota di contenuto	Foreword -- Preface -- 1 The Total Least Squares Problems -- 1.1 Introduction -- 1.2 Some TLS Applications -- 1.3 Preliminaries -- 1.4 Ordinary Least Squares Problems -- 1.5 Basic TLS Problem -- 1.6 Multidimensional TLS Problem -- 1.7 Nongeneric Unidimensional TLS Problem -- 1.8 Mixed OLS-TLS Problem -- 1.9 Algebraic Comparisons Between TLS and OLS -- 1.10 Statistical Properties and Validity -- 1.11 Basic Data Least Squares Problem -- 1.12 The Partial TLS Algorithm -- 1.13 Iterative Computation Methods -- 1.14 Rayleigh Quotient Minimization Non Neural and Neural Methods -- 2 The MCA EXIN Neuron -- 2.1 The Rayleigh Quotient -- 2.2 The Minor Component Analysis -- 2.3 The MCA EXIN Linear Neuron -- 2.4 The Rayleigh Quotient Gradient Flows -- 2.5 The MCA EXIN ODE Stability Analysis --

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6.4 Rank One Analysis Around the TLS Solution -- 6.5 The GeMCA Spectra -- 6.6 Qualitative Analysis of the Critical Points of the GeMCA EXIN Error Function -- 6.7 Conclusion -- References -- Index.

Sommario/riassunto

"Written by three leaders in the field of neural based algorithms, Neural Based Orthogonal Data Fitting proposes several neural networks, all endowed with a complete theory which not only explains their behavior, but also compares them with the existing neural and traditional algorithms. The algorithms are studied from different points of view, including: as a differential geometry problem, as a dynamic problem, as a stochastic problem, and as a numerical problem. All algorithms have also been analyzed on real time problems (large dimensional data matrices) and have shown accurate solutions. Where most books on the subject are dedicated to PCA (principal component analysis) and consider MCA (minor component analysis) as simply a consequence, this is the fist book to start from the MCA problem and arrive at important conclusions about the PCA problem."--