

| | |
|-------------------------|--|
| 1. Record Nr. | UNINA9910970915003321 |
| Autore | Hjørungnes Are |
| Titolo | Complex-valued matrix derivatives : with applications in signal processing and communications // Are Hjørungnes |
| Pubbl/distr/stampa | Cambridge : , : Cambridge University Press, , 2011 |
| ISBN | 1-107-21406-8 1-283-05218-0 9786613052186 1-139-04173-8 1-139-04250-5 1-139-04514-8 1-139-03859-1 0-511-92149-7 1-139-04096-0 |
| Edizione | [1st ed.] |
| Descrizione fisica | 1 online resource (xxi, 247 pages) : digital, PDF file(s) |
| Classificazione | TEC000000 |
| Disciplina | 621.382/2 |
| Soggetti | Matrix derivatives Systems engineering Signal processing - Mathematical models Telecommunication - Mathematical models |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Title from publisher's bibliographic system (viewed on 05 Oct 2015). |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Background material -- Theory of complex-valued matrix derivatives -- Development of complex-valued derivative formulas -- Complex Hessian matrices for scalar, vector, and matrix functions -- Generalized complex-valued matrix derivatives -- Applications in signal processing and communications. |
| Sommario/riassunto | In this complete introduction to the theory of finding derivatives of scalar-, vector- and matrix-valued functions with respect to complex matrix variables, Hjørungnes describes an essential set of mathematical tools for solving research problems where unknown parameters are contained in complex-valued matrices. The first book examining complex-valued matrix derivatives from an engineering perspective, it |

uses numerous practical examples from signal processing and communications to demonstrate how these tools can be used to analyze and optimize the performance of engineering systems. Covering un-patterned and certain patterned matrices, this self-contained and easy-to-follow reference deals with applications in a range of areas including wireless communications, control theory, adaptive filtering, resource management and digital signal processing. Over 80 end-of-chapter exercises are provided, with a complete solutions manual available online.
