1.	Record Nr.	UNINA9910785651403321
	Autore	Hjørungnes Are
	Titolo	Complex-valued matrix derivatives : with applications in signal processing and communications / / Are Hjørungnes [[electronic resource]]
	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
	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.