Schott, James R.
Matrix analysis for statistics. 2nd ed. (English) ⟨Zbl 1076.15002⟩
Wiley Series in Probability and Statistics. Hoboken, NJ: Wiley-Interscience (ISBN 0-471-66983-0/hbk).
xvi, 456 p. (2005).

The first edition of this book appeared in 1997 and was reviewed by the present reviewer. [Matrix analysis for statistics. Wiley Series in Probability and Mathematical Statistics (New York, NY: Wiley) (1997; Zbl 0872.15002)].

In this second edition the former Chapter 7 becomes Chapter 8 (and subsequent chapters are numbered accordingly). The new Chapter 7 is titled *Partitioned matrices* and relates to partitioning into 2×2 form. It contains material on determinant and inverse that was given as a section in Chapter 7 of the first edition. The author writes: "The coverage of eigenvalues in Chapter 3 has also been expanded ...the last section of Chapter 3 ...has now been replaced by two sections." There are other additions, both theorems and examples, elsewhere, and over 100 new exercises. Elliptical distributions are now mentioned. Errors in the first edition have been corrected.

The list of references (118 items) supplements the list of the first edition by about 30 items. In the case of books, some items from the former list are cited in their newer editions. Unfortunately, the reviewer's "Non-negative matrices: An introduction to theory and applications" (1973; Zbl 0278.15011) has (still) not been cited in its second edition of 1981 (Zbl 0471.60001), which had the title "Non-negative matrices and Markov chains" and was published by Springer. A paperback photoreproduction of this 1981 book, with some additional references and Corrigenda, is in preparation by Springer.

Reviewer: Eugene Seneta (Sydney)

MSC:

		Cited in **2** Reviews
15-01	Introductory exposition (textbooks, tutorial papers, etc.) pertaining to linear algebra	Cited in **68** Documents
62-01	Introductory exposition (textbooks, tutorial papers, etc.) pertaining to statistics	
15A09	Theory of matrix inversion and generalized inverses	
15A03	Vector spaces, linear dependence, rank, lineability	
15A06	Linear equations (linear algebraic aspects)	
15A18	Eigenvalues, singular values, and eigenvectors	
15A60	Norms of matrices, numerical range, applications of functional analysis to matrix theory	
26B12	Calculus of vector functions	
15A15	Determinants, permanents, traces, other special matrix functions	
15A04	Linear transformations, semilinear transformations	
15B36	Matrices of integers	
15A23	Factorization of matrices	
15A21	Canonical forms, reductions, classification	
62J05	Linear regression; mixed models	

Keywords:

determinant; inverse; eigenvalues; elliptical distributions; sparse matrices; sparse inverses