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Autore	Dellacherie Claude
Titolo	Inverse M-Matrices and Ultrametric Matrices [[electronic resource] /] / by Claude Dellacherie, Servet Martinez, Jaime San Martin
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Inverse M - matrices and potentials -- Ultrametric Matrices -- Graph of Ultrametric Type Matrices -- Filtered Matrices -- Hadamard Functions of Inverse M - matrices -- Notes and Comments Beyond Matrices -- Basic Matrix Block Formulae -- Symbolic Inversion of a Diagonally Dominant M - matrices -- Bibliography -- Index of Notations -- Index.
Sommario/riassunto	The study of M-matrices, their inverses and discrete potential theory is now a well-established part of linear algebra and the theory of Markov chains. The main focus of this monograph is the so-called inverse M-matrix problem, which asks for a characterization of nonnegative matrices whose inverses are M-matrices. We present an answer in terms of discrete potential theory based on the Choquet-Deny Theorem. A distinguished subclass of inverse M-matrices is ultrametric matrices, which are important in applications such as taxonomy. Ultrametricity is revealed to be a relevant concept in linear algebra and discrete potential theory because of its relation with trees in graph theory and mean expected value matrices in probability theory. Remarkable properties of Hadamard functions and products for

the class of inverse M-matrices are developed and probabilistic insights are provided throughout the monograph.
