The representation and approximation for the weighted Minkowski inverse in Minkowski space

ABSTRACT

This paper extends some results for the weighted Moore–Penrose inverse in Hilbert space to the so-called weighted Minkowski inverse of an arbitrary rectangular matrix AMm,n in Minkowski spaces μ. Four methods are also used for approximating the weighted Minkowski Inverse . These methods are: Borel summable, Euler–Knopp summable, Newton–Raphson and Tikhonov's methods.

Keyword: Weighted Moore–Penrose inverse, Weighted Minkowski inverses, Group inverse, Matrix norm, Weighted SVD, Minkowski space, Convergence, Sequence, Weighted range symmetric matrix, Positive definite matrix