NORM BOUNDS ON THE SUM OF BLOCK DIAGONAL MATRICES

CHI-KWONG LI AND ROY MATHIAS

Abstract. We bound the norm of the sum of block diagonal matrices whose block structures may not be compatible, and use the result to bound the norm of banded positive semidefinite matrices. We consider the extension of the result to other norms.

REFERENCES

[1] T. ANDO, On the structure of operators with numerical radius one, *Acta Sci. Math.*, 34:11–15, 1973.
[2] T. ANDO AND K. OKUBO, Induced norms of the Schur multiplier operator, *Linear Algebra Appl.*, 147:181–199, 1991.
[3] R. A. HORN AND C. R. JOHNSON, *Matrix Analysis*, Cambridge University Press, New York, 1985.
[4] R. A. HORN AND C. R. JOHNSON, *Topics in Matrix Analysis*, Cambridge University Press, New York, 1991.
[5] A. W. MARSHALL AND I. OLKIN, *Inequalities: The Theory of Majorization and its Applications*, Academic Press, New York, 1979.
[6] R. MATHIAS, Matrix completions, Hadamard products and norms, *Proc. Amer. Math. Soc.*, 117(4):905–918, 1993.
[7] J. K. MERIKOSKI, Operator norms of submatrices, *Linear Algebra Appl.*, 36: 173–188, 1981.
[8] B. N. PARLETT, Problem 10839. *Amer. Math. Monthly*, 107(10):950, Dec. 2000.

ⓒ ELEMENT, Zagreb
Paper MIA-06-20

Mathematical Inequalities & Applications
www.ele-math.com
mia@ele-math.com