THE FINITE SECTION METHOD FOR BAND-DOMINATED OPERATORS - CONVERGENCE OF NORMS AND CONDITION NUMBERS

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Consider the spaces $l^p(\mathbb{Z})$, $1 \leq p \leq \infty$, and say that a bounded linear operator on $l^p(\mathbb{Z})$ is banded if it is a finite sum of the form $\sum a_k V_k$, where V_k is the shift operator by k positions, and aI denotes the operator of multiplication by the function $a \in l^\infty(\mathbb{Z})$. Take the closure of the set of all banded operators with respect to the operator norm and call its elements band-dominated. We deal with the stability of the finite section method for such operators. Of particular interest is the asymptotic behavior of the norms and condition numbers of these finite sections. We state the results and formulas in terms of limit operators which are associated with the finite section sequence.

The talk is based on a joint work with B. Silbermann.

REFERENCES

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