

NORMS OF POSITIVE OPERATORS ON L^p -SPACES

RALPH HOWARD*
ANTON R. SCHEP**

University of South Carolina

ABSTRACT

Let $0 \leq T : L^p(Y, \nu) \rightarrow L^q(X, \mu)$ be a positive linear operator and let $\|T\|_{p,q}$ denote its operator norm. In this paper a method is given to compute $\|T\|_{p,q}$ exactly or to bound $\|T\|_{p,q}$ from above. As an application the exact norm $\|V\|_{p,q}$ of the Volterra operator $Vf(x) = \int_0^x f(t)dt$ is computed.

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF SOUTH CAROLINA, COLUMBIA, SC 29208

1991 *Mathematics Subject Classification.* 47A30, 47B38, 47G05.

Key words and phrases. Operator norms, Positive linear operator, Volterra operator.

*Research supported in part by the National Science Foundation under grant number DMS-8803585, **Research supported in part by a Research and Productive Scholarship grant from the University of South Carolina