

# COMPACT APPROXIMATION OF INTEGRAL OPERATORS WITH APPLICATIONS TO COMPOSITION OPERATORS

*PEKKA NIEMINEN*  
(University of Helsinki)

Feder (1980) showed that a bounded linear operator acting between  $L^1$  spaces of compact metric measure spaces (or just the unit interval) may fail to have a best compact approximation. However, a best weakly compact approximation always exists, as shown by Weis (1984). Weis's proof was based on an integral representation of the adjoint of the operator. We provide a modification of Weis's method and seek conditions under which it yields a best compact approximation. As applications we derive formulas for the essential and weak essential norms of (weighted) analytic composition operators.