

**ON THE CALDERÓN-ZYGMUND STRUCTURE OF PETERMICHL'S KERNEL,  
WEIGHTED INEQUALITIES**

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**ABSTRACT** We show that Petermichl's dyadic operator  $\mathcal{P}$  (S. Petermichl (2000), *Dyadic shifts and a logarithmic estimate for Hankel operators with matrix symbol*) is a Calderón-Zygmund type operator on an adequate metric normal space of homogeneous type. As a consequence of a general result on spaces of homogeneous type, we get weighted boundedness of the maximal operator  $\mathcal{P}^*$  of truncations of the singular integral. We show that dyadic  $A_p$  weights are the good weights for the maximal operator  $\mathcal{P}^*$  of the scale truncations of  $\mathcal{P}$ .