Boundedness of n-multiple discrete Hardy type operators

Temirkhanova Ainur

Faculty of Mechanics and Mathematics

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan

E-mail: ainura-t@yandex.ru

Abstract

We find necessary and sufficient conditions on weighted sequences ω_i, $i = 1, 2, ...n - 1$, u and v, for which the operator $(S_{n-1}f)_i = \sum_{k_1=1}^{i} \omega_{1,k_1} \cdots \sum_{k_{n-1}=1}^{k_{n-2}} \omega_{n-1,k_{n-1}} \sum_{j=1}^{k_{n-1}} f_j$, $i \geqslant 1$ is bounded from $l_{p,v}$ in $l_{q,u}$, for $1 < q < p < \infty$.