

## ON A TRACE INEQUALITY FOR ONE-SIDED POTENTIALS WITH MULTIPLE KERNELS

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*Dedicated to the anniversaries  
of Prof. P.L. Butzer and Prof. G.F. Roach*

### Abstract

Necessary and sufficient conditions for the weight function  $v$  guaranteeing the trace inequality

$$\|R_{\alpha,\beta}f\|_{L_v^q} \leq c\|f\|_{L^p}$$

for the Riemann-Liouville transform with multiple kernels

$$R_{\alpha,\beta}f(x,y) = \int_0^x \int_0^y (x-t)^{\alpha-1}(y-\tau)^{\beta-1}f(t,\tau)dtd\tau, \quad x,y > 0,$$

are obtained, where  $0 < \alpha < 1/p$ ,  $\beta > 1/p$  and  $1 < p \leq q < \infty$ . Analogous problem for other two-dimensional one-sided potentials is also studied.

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