

# Heat kernel bounds for nonlocal operators with singular kernels

Moritz Kassmann  
Bielefeld University

Kyung-Youn Kim(金璟允)\*  
National Chengchi University

Takashi Kumagai  
Kyoto University

## Abstract

We consider  $d$ -dimensional Markov processes which are written as  $d$  independent copies of 1-dimensional jump processes so that the jumping measures are singular with respect to the  $d$ -dimensional Lebesgue measures. We obtain the sharp two-sided bounds of the fundamental solution for the integro-differential operators corresponding to the Markov processes.

Keywords: Markov jump process, heat kernel, integro-differential operator.