

**ESTIMATES OF THE TRANSITION DENSITIES FOR THE REFLECTED
BROWNIAN MOTION ON SIMPLE NESTED FRACTALS**

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We give sharp two-sided estimates of the transition probability densities for the Brownian motion on a M -complex of size $M \in \mathbb{Z}$ for a class of planar simple nested fractals.

Theorem 1. *The transition probability densities $g_M(t, x, y)$ for the Brownian motion reflecting in the vertices of an M -complex satisfy the following inequalities*

$$c_1 (f_{c_2}(t, |x - y|) \vee h_{c_3}(t, M)) \leq g_M(t, x, y) \leq c_4 (f_{c_5}(t, |x - y|) \vee h_{c_6}(t, M)),$$

where

$$f_c(t, r) = t^{-d_s/2} \exp\left(-c \left(\frac{r^{d_w}}{t}\right)^{1/(d_J-1)}\right)$$

$$h_c(t, M) = L^{-d_f M} \left(\frac{L^M}{t^{1/d_w}} \vee 1\right)^{d_f - d_w/(d_J-1)} \exp\left(-c \left(\frac{L^M}{t^{1/d_w}} \vee 1\right)^{d_w/(d_J-1)}\right)$$

and constants c_1, \dots, c_6 do not depend on t, x, y or M .