

Probability of Identity,  $\psi(x)$

$\bar{x}$

$\delta$

One Long Jump

$$\psi = \Gamma(1+\alpha)\sin(\pi\alpha/2)\frac{D_\alpha}{2\pi\rho\mu^2}x^{-1-\alpha}$$

One Quick Jump

$$\psi = \Gamma(1-\alpha)\sin(\pi\alpha/2)\frac{x^{-1+\alpha}}{2\pi D_\alpha\rho}$$

Initial Contact

$$\psi = (1+[2^{(\alpha+3)/2}\pi/\Gamma(1/2-\alpha/2)]D_\alpha\rho\delta^{1-\alpha})^{-1}$$

Superdiffusive Spreading

$$\psi = \frac{e^{-(x/\bar{x})^{\alpha-1}}}{2\alpha\sin(\pi/\alpha)\rho\mu\bar{x}+1}$$

Diffusive Spreading

$$\psi = \frac{e^{-x/\bar{x}}}{4\rho\mu\bar{x}+1}$$

1

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Probability of Identity,  $\psi(r)$

$\bar{x}$

$\delta$

One Long Jump $\psi = 2^{\alpha-1} \sin(\pi\alpha/2) \Gamma(1 + \alpha/2)^2 \frac{D_\alpha}{\pi^2 \rho \mu^2} r^{-2-\alpha}$	
One Quick Jump $\psi = \frac{\Gamma(1 - \alpha/2)}{2^\alpha \Gamma(\alpha/2)} \frac{r^{-2+\alpha}}{\pi D_\alpha \rho}$	Diffusive Spreading $\psi = \frac{\text{Log}(\bar{x}/r)}{4 D_2 \rho \pi + \text{Log}(\bar{x}/\delta)}$
Initial Contact $\psi = (1 + [2^{2+\alpha/2} \pi / \Gamma(1 - \alpha/2)] D_\alpha \rho \delta^{2-\alpha})^{-1}$	Initial Contact $\psi = \frac{\text{Log}(\bar{x}/\delta)}{4 D_2 \rho \pi + \text{Log}(\bar{x}/\delta)}$