

Zhang Replies: There appear to be three approaches (Refs. 1, 2, 4; all citations refer to references in the preceding Comment) to the same problem of diffusion in a random potential. However, their objectives and methods are different and, in fact, they can be shown to be all consistent with each other where they can be compared. Reference 2 deals with the eigenvalue distribution problem and indeed, extending this method, the authors of the Comment show that the localization center will move a distance $t/(\ln t)^{1/2}$ in a single jump. This result can be also derived in my Letter: Substituting Eq. (9) into the unnumbered equation just above it, to the leading order one obtains $t/(\ln t)^{1/2}$. For t large the localization center moves through a sequence of intermittent jumps. Because of the hierarchical nature the last jump is most dominant. This sum is called $x_c(t)$ in my Letter [note a misprint: the average is clearly done over absolute values; and there is a mathematical error: substituting (5) into (2) one obtains $x_c \approx t/(\ln t)^{1/2}$ rather than $t/2 \ln t$] and can be obtained only by the spatial variation. That the last jump distance and sum of the total jump displacements are the same order of magnitude is not *a priori* known, but is a result of delicate cancellations. All three approaches give the unique relation $E_x = (\ln x)^{1/2}$ (called $\max U$ in Ref. 4); using this in Eq. (2) in my Letter or an equation between (5) and (6) in Ref. 4, $\psi(x,t) \approx \exp[-\delta\chi + \max U t]$, and carrying out the

variation with respect to χ one obtains the same result. Presumably if one carries out the spatial variations using the eigenvalue approach in Ref. 2, one would also obtain this result. The fit to the figure in the Comment is certainly better, as one can see that it is difficult to tell the difference between $t/\ln t$ and $t/(\ln t)^{1/2}$ numerically.

In Ref. 4 the higher moments of the distribution function $\langle \psi^p(x,t) \rangle_{av}$ are obtained. However, those quantities do not contain any information on the spread of the localization center defined in my Letter $x_s = \langle [x - x_c(t)]^2 \rangle_{av}$; the inner average is done with $P(x,t) = \psi(x,t) / \int dx \psi(x,t)$, and the outer one over independent samples.

As to the biological application suggested in the Comment, it certainly sheds new light on the evolution of species; however, it seems appropriate to elucidate their ideas at length and quantify the claims in a fuller article.

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