The Center of Mass of the ISE and the Wiener Index of Trees

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Abstract

We derive the distribution of the center of mass S of the integrated superBrownian excursion (ISE) from the asymptotic distribution of the Wiener index for simple trees. Equivalently, this is the distribution of the integral of a Brownian snake. A recursion formula for the moments and asymptotics for moments and tail probabilities are derived.

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