

Abstract Submitted  
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**Probing self similar structures by studying the frequency of directional changes**<sup>1</sup> ALI TABELI, University of Northern Iowa, STANISLAV BUROV, Bar Ilan University, ANDREW MILBRANDT, KYLE SPURGEON, University of Northern Iowa — It has been shown that in two and higher dimension, when the time series of individual particle trajectories exist, the distribution of relative angles of motion between successive time intervals of random motions provides information about stochastic processes, which is beyond the information obtained from studying mean squared displacement. We show that this distribution is a useful measure, which provides supplementary information about the structural properties of the media that a random walker is diffusing. We compare the behavior of this measure for common self-similar structures. We show that the distribution of relative angles is a good measure to discriminates different complex structural geometries.

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