[P21] Multifractal measures of absorbing iIons on a lipid membrane

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We investigate the multifractals of absorbing ions on a charged lipid membrane. As we consider the charged ion as the random walker in the one-dimensional lattice, it is assumed that we introduce the first passage time at which the charged ion arrives for the first time at the same absorbing barrier after starting from an absorbing barrier. In this paper, we analyze the multifractal behavior from the charged ions arrived for the first time at an absorbing barrier. Our simulation for two kinds of ion is found to estimate the fractal dimension D_0 =0.505, 0.528, 0.545 (0.518, 0.544, 0.557) for K^+ (Na^+) ions in different time intervals T = 2, 4, and 6. In particular, the maximum value of multifractal strength has 1.382 for Na^+ ion in time interval T = 6.