

**NUMERICAL SOLUTION OF FRACTIONAL
DIFFUSION EQUATION IN FINITE DOMAIN WITH
MEMORY**

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Matrix approach method enables us to solve numerically bounded FD with memory. The solutions in some aspects deviate from unbounded analytical results. Some of these deviations are investigated qualitatively. First issues are in the class of scaling laws which are important in random walk processes like diffusion. Advective phenomena are the other aspect of solutions which are observed. Again some deviation appears in the scaling behavior of peak travelling. Dependence of these deviations on the parameters of equation is described qualitatively. Negative transport is the other property of solutions which has physical importance. Mechanisms responsible for this phenomenon are described and effects of equation's parameter in the form of negative transport regions are represented in some graphs. Other important abnormal properties of solutions which emerge in some cases are the negative value of solutions in some timespace region and emergence of instability, these irregularities are also described.

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