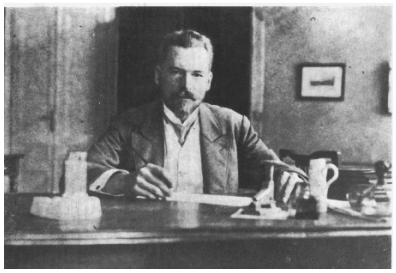

Contribution ID : **63** Type : **Poster**

A particle's transport and absorption modelling in a system consisting of two media separated by a thin membrane

We study a system which consists of two media divided by a thin partially permeable membrane. One of these media is diffusive. The second one is subdiffusive. Moreover, transported particles can be absorbed in the subdiffusive medium. In order to find methematical description of a transport process we use a new, universal model that is presented in details in \textit{T. Koszto\l{}owicz, Phys. Rev. E \textbf{99}, 022127 (2019)}. This new model leads to the general (sub)diffusion–absorption equations, Green's functions and boundary conditions at a thin partially permeable membrane for a system consisting of two media separated by a thin membrane. We find concentration profiles and the other functions which describe the time evolution of an amount of transported substance between media, as well as the amount of substance that will be absorbed depending on time in the subdiffusive medium. We also compare our results with the experimental data found in the scientific literature.

Summary

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Session Classification : Session 8