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Statistic resistivity of non-equilibrium states in transport gases

Tuesday, 19 June 2018 10:10 (20 minutes)

This presentation will focus on the analysis of non-equilibrium states in short-range transport gas. We will try to demonstrate and test, that a non-equilibrium system will have the same distribution of clearances as an equilibrium state, just with a different parameter. In this case we are working with a short-range transport gas with a logarithmic potential, which corresponds with the gamma distribution of clearances. First we will show, how would the distribution change provided, that our hypothesis is valid. We will discuss the variants of the system with random and equidistant initial distribution of particles. Afterwards we will derive the analytic formulation for the estimate of the time dependence of the parameter β. The last task is to verify the quality of the derived analytic formula using statistical methods. Using the bootstrap method we show, that the level of rejection is sufficiently low, therefore we don't reject the hypothesis mentioned above.

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