

The Numerical Solutions of Heat Equation on Unbounded Domains

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In this talk, the numerical solutions of three problems of heat equation on unbounded domains are considered. For each problem, we introduce an artificial boundary to finite the computational domain. On the artificial boundary we propose an exact boundary condition to reduce the original problem to an initial boundary problem of heat equation on the finite computational domain, which is equivalent to the original problem. Then the finite difference method and finite element method are used to solve the reduced problem on the finite computational domain. Finally three numerical examples show the feasibility and effectiveness of the method given in this talk.