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Abstracts of Short Communications and Posters

Section:

11. Mathematical Physics

1991 MS Classification: 35, 73, 76
Aripov, M., Tashkent State University, Uzbekistan
On splitting method for simulation of nonlinear processes
The method of nonlinear splitting for some class nonlinear parabolic, hyperbolic and elliptic type equation and their system which is the basis for modeling various nonlinear processes filtration in a liquid and gas, diffusion, heat conductivity, ecology, distribution of waves and others are offered. This method allows to reduced multidimensional nonlinear equations in particular derivatives to selfsimilar or approximately selfsimilar forms. Based on the obtained equations the global solvability of the Cache's and boundary problems was proved. The estimates for weak solution and to agree with physical processes of fronts are obtained. An asymptotic of solution near the front and in the infinity is established. Using the obtained estimates of solution the numerical calculations are carried out.