

عنوان مقاله:

Application of the RBF meshfree method and the domain decomposition to the numerical solution of the forward-backward heat equation

محل انتشار:

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خلاصه مقاله:

We apply a radial basis function (RBF) meshless method to the one dimensional forward-backward heat equation. The physical domain is divided into two subdomains resulting in two standard forward and backward subproblems. An RBF meshfree method is applied to each subproblem assuming a virtual boundary between the subdomains and using an initial approximate solution on the interface. A finite difference scheme is employed for the time derivative and an iterative domain decomposition method is used to achieve a desired accuracy. Some numerical results will be given to show the effectiveness of the new method.

کلمات کلیدی:

Forward-backward heat equation, Non-overlapping domain decomposition, Radial basis functions, Meshless methods.

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