Numerical analysis of the parabolic interface problem with variable coefficients

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Abstract

The convergence of difference scheme for parabolic interface problem with variable coefficients is investigated. An estimate of the rate of convergence in a special discrete $\widetilde{W}_2^{2,1}$ Sobolev norm, compatible with the smoothness of the coefficients and solution, is obtained.

Keywords: Interface problems, Convergence, Sobolev norm

References

1. Bojović, D., Sredojević, B., Jovanović, B. : Numerical approximation of a two-dimensional parabolic time-dependent problem containing a delta function, J. Comp. Appl. Math., 259 (2014), 129-137.
2. Sredojević, B., Bojović, D. : Finite difference approximation for the 2D heat equation with concentrated capacity, FILOMAT 32 (20) (2018), 6976-6987.