

A Posteriori Analysis of the Spectral Element Discretization of Heat Equation

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Abstract : In this paper, we present a posteriori analysis of the discretization of the heat equation by spectral element method. We apply Euler's implicit scheme in time and spectral method in space. We propose two families of error indicators, both of which are built from the residual of the equation and we prove that they satisfy some optimal estimates. We present some numerical results which are coherent with the theoretical ones.

Keywords : heat equation, spectral elements discretization, error indicators, Euler

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