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SDFEM with non-standard higher-order finite elements for a convection-diffusion problem with characteristic boundary layers

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Review text:

The author considers singularly perturbed convection-diffusion problem with an exponential layer at the outflow boundary and two characteristic layers on a rectangular domain. Some non-standard higher-order finite elements using streamline diffusion finite element method (SDFEM) are proposed. A convergence analysis is provided. In addition to this, for the standard higher-order space Q_p supercloseness of the numerical solution w.r.t. an interpolation of the exact solution in the streamline diffusion norm of order $p + 1/2$ is proved.

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