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Süleyman Cengizci [1]

Abstract. In this study, numerical behavior of singular perturbed ordinary differential equations that depend on positive small parameters is investigated. An efficient method that combines the well-known Finite Element Method (FEM) and an asymptotic approach so-called Successive Complementary Expansion Method (SCEM) is employed for numerical simulations of the multi-parameter problems.

Keyword: Asymptotic approximation, singular perturbation, finite element method, multi-parameter problem, SCEM.
AMS 2010: 34E15, 65L11, 65L60.

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