PHYSICAL ELLIPTIC SCHEMES ON SOLVING TIME DEPENDENT FINITE ELEMENT PROBLEMS

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In this paper we investigated physical elliptic schemes which contribute major role for solving real world problems using finite element techniques. In the past there were physical problems which were solved using finite element techniques with elliptic partial differential equation. Some are: Galerkin finite element approximation of stochastic elliptic partial differential equations, an elliptic collocation- finite element method with interior penalties, solving elliptic finite element systems in near linear time with support pre-conditioners. In many applications after time discretization a large number of problems remain to be solved numerically. Example: Singularly perturbed problems (SPP). SPP arise in many areas, such as in chemical kinetics, fluid mechanics and system control. So we worked out to investigate relations between physical systems and elliptic schemes.

Keywords: Elliptic partial differential equations, finite element method, physical system