Kikuchi, Fumio

On a discrete compactness property for the Nedelec finite elements. (English) Zbl 0698.65067

J. Fac. Sci., Univ. Tokyo, Sect. I A 36, No. 3, 479-490 (1989).

It is shown that the simplest Nedelec finite elements [cf. *J.-C. Nedelec*, Numer. Math. 35, 315-341 (1980; Zbl 0419.65069)] in R^2 and R^3 satisfy a kind of discrete compactness property under some assumptions on the considered domain. This property may be effectively employed to guarantee the stability and the convergence of the finite element solutions.

The results were partially announced by the author in Comput. Methods Appl. Mech. Eng. 64, 509-521 (1987; Zbl 0644.65087).

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MSC:

65N30 Finite element, Rayleigh-Ritz and Galerkin methods for boundary value problems involving PDEs
35J25 Boundary value problems for second-order elliptic equations
78A30 Electro- and magnetostatics

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