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Plate bending elements with discrete constraints: New triangular elements. (English)

Zbl 0729.73227

Comput. Struct. 35, No. 4, 505-522 (1990).

Summary: In recent years a series of elements based on Reissner-Mindlin assumptions and using discrete constraints (collocation type) has been introduced. These elements have proved to be very effective, however their relation to straightforward mixed approximations has not been clear. In this paper this relationship is discussed and the reasons for their success explained. This allows new and effective triangular elements to be developed. The presentation shows the closed relationships with the DKT (discrete Kirchhoff theory) element previously available only for thin plates and allows extension of their applications.

MSC:

74S05 Finite element methods applied to problems in solid mechanics

74K20 Plates

Cited in **1** Review
Cited in **28** Documents

Keywords:

Reissner-Mindlin assumptions; discrete constraints; collocation type; triangular elements; discrete Kirchhoff theory

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