ENGLISH SUMMARY

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AALTO, J. and PRAMILA, A., A simple finite element program. Rakenteiden Mekaniikka 8 (1975) 1, p. 3...34.

The article describes a Univac1108 FORTRAN V coded program which applies the finite element method. The program is made as simple as possible using complete modular principle in coding. Because of the modular form the program applies with few changes in subroutines, specific for the problem and element type, to different types of field probleme.

The subroutines are completely independent, beause COMMON statements are not used. The use of COMMON statements is general in FEM programs, but it accomplishes difficulties in modifying a program for different types of problems and elements.

In the article the quasiharmonic equation, plane stress and beam on elastic foundation are introduced as examples.

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SAMUELSSON, ALF, Projection and non-projection finite element methods - a survey of different approaches. Rakenteiden Mekaniikka 8 (1975) 1, p. 35...66.

Finite element methods are variational methods for solving differential equations with approximations which usually are polynomials defined with aid of a mesh dividing the region into elements of different shapes. The correct solution is found in a space V of functions which satisfy certain continuity conditions. If the approximate solution is sought in a subspace $V_h \subset V$ the method is said to be a projection one. Some procedures for construction of projection and non-projection finite element methods are described.