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JUKSANEE VIRULSRI : DEFORMATION AND STRESS ANALYSIS OF A STEAM TURBINE BLADE. THESIS ADVISOR : PROF. PRAMOTE DECHAUMPAI, Ph.D. 153 pp. ISBN 974-638-035-4

This thesis present a finite element method of solid problem step by step. Beginning from deformation analysis of annular flat plate with radial temperature variation which is the one dimensional problem,solving two dimensional problem of thermal stress analysis for axisymmetric problem and analyzing thermal stress of three dimensional solid problem which is purposed for steam turbine blade which have solid model and operating under high pressure, temperature and centrifugal force

Finite element equation corresponding to these one dimensional, two dimenional and three dimensional problems were derived from equilibrium equation of each problem by using Galerkin method of weighted residuals and developing three corresponding finite element program computer which were verified by solving academic problems that have exact solutions before applying to solve more complex problems

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