Buletinul Stiintific al Universitătii din Baia Mare
Seria B, Matematică-Informatică, vol. XI (1995), 89-104.

Dedicated to the Centenary of "Gazeta Matematică"

A FINITE ELEMENT METHOD FOR FRICTIONAL CONTACT PROBLEMS

Nicolae POP

ABSTRACT. The present paper is concerned with the analysis with finite element of a friction contact phenomena for two elastic bodies that come into contactwith, friction obeying the normal compliance law. Variatonal principles for a class of friction contact problems are also established and finite element models and numerical algorithms for analyzing of this problem are presented. A perturbed Lagrangian discrete formulation within the framework of F.E.M. is obtained, and in the 3D case is used a four-nodes contact finite element which consists in 3 masters and 1 slave, generalizing the two dimensional case considered by Ju and Taylor [3] and by Wriggers and Simo [8]