Applied Mathematical Sciences 2014 vol.8 N157-160, pages 7889-7897

Implementation of contact interaction in a finite - element formulation

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Abstract

© 2014 O. A. Sachenkov, V. I. Mitryaikin, T. A. Zaitseva and Yu. G. Konoplev. The paper presents a technique which makes it possible to take into account contact interactions between surfaces based on the finite element method. The technique is based on iterative cycles, determining statuses of the contact elements and renewing the contact forces to satisfy the condition of zero penetration of all active contact elements. The proposed technique allows us also to take account of friction between the contacting elements. The paper considers an example of implementing contact interaction with regard to friction between bodies, and solves a model problem.

http://dx.doi.org/10.12988/ams.2014.49769

Keywords

Contact interaction, Finite element method