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Contributions in the study of different boundary problems involved in contact mechanics

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1. Abstract

In spite of the numerous works, the methods for solving contact problems in mechanics are very broad. There are two types of contact problems. We will consider the unilateral contact. Moreover, we will limit the case of the linear elasticity. We use regularization methods to treat the problem difficulties. In addition, we solve the unilateral contact problem with choice method.

2. Introduction

The mechanics contact problems are actuality problems which has many application fields (the medicine, civil engineering,.....). The study of the problem of deformable solids contact is to know the reaction of structures when they undergo forces, then to study their competence, their movement.

The unilateral contact problem between a deformable solid and a rigid foundation or between two deformable solids is a partial derivative equation or an equation system which has constraints of inequality type on surface or contact surface.

3- Thesis work plan :

- Bibliographic research
- We give the mathematical formulation of the model.
- The variational formulation of the problem.
- Then we enunciate the main theorem of existence and uniqueness.

4. Keywords

unilateral contact, partial derivative equation, contact mechanic problems, deformable solids, linear elasticity.

5. References

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