

# WEAK SOLVABILITY FOR A CLASS OF CONTACT PROBLEMS\*

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## Abstract

A unilateral frictionless contact model, under the small deformations hypothesis, for static processes is considered. We model the behavior of the material by a constitutive law stated in a subdifferential form. The contact is described with Signorini's condition. Our study focuses on the weak solvability of the model, based on a weak formulation with dual Lagrange multipliers.

MSC: 74M15, 47J20, 74D10

**keywords:** frictionless unilateral contact, subdifferential, dual Lagrange multipliers, weak solution.

## 1 Introduction

The purpose of this paper is to investigate the weak solvability of a unilateral frictionless contact problem using a technique with dual Lagrange multipliers. The weak formulations with *dual Lagrange multipliers* allow to write

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