



PIMS / AMI Seminar

Tuesday, October 13, 2015

12:00 p.m.

**MacEwan University, Edmonton
Room 9-208**

“Stability of the Contact Zone for a Shallowshell”

**Bernadette Miara
Université Paris-Est**

Abstract

This work deals with the variation of the solution to an obstacle problem with respect to the variation of its parameters. More precisely, a mechanical structure is pushed by some external forces against an obstacle in such a way that the equilibrium solution involves a part of the domain in which the structure is strictly in contact with the obstacle. It is known from the theory of variational inequalities that studying the variation of the solution as the external forces vary amounts to studying the variation of the boundary of this contact zone. This problem has been studied in previous works in the scalar case, and it was open in the general case where the unknown is a vector field, due to the coupling between the components. As a first step, the present work considers the case of a linearly elastic shallow membrane shell where the coupling between the in-plane and normal components of the displacement arises from the curvature.

This is a joint work with Dr A.L'éger, Laboratoire de Mécanique et d'Acoustique, Marseille