

Infinite-dimensional projected dynamics and the 1-dimensional obstacle problem*

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Abstract. In this paper we present a direct application of the theory of infinite-dimensional projected dynamical systems (PDS) related to the well-known *obstacle problem*, i.e., the problem of determining the shape of an elastic string stretched over a body (obstacle). While the obstacle problem is static in nature and is solved via variational inequalities theory, we show here that the dynamic problem of describing the vibration movement of the string around the obstacle is solved via the infinite-dimensional theory of projected dynamical systems.

1. Introduction

The rigorous theory of infinite-dimensional PDS started in 2002, with the works of Isac and Cojocaru (see [14], [4]), and continued in [5], [15]. The most recent theoretical and applicative developments can be found in Cojocaru et al. ([3] and [6]). Such a theory comes as a natural extension to

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