

CHAPTER 3

Tsunami maximum flooding assessment in GIS environment

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Abstract

The presence of mega-boulders scattered landward along gently sloping rocky coasts is attributed to the impact of tsunamis or of exceptional storms. Considering the original position and the size of the largest boulder is possible to estimate the characteristics of the wave that moved them in the past, and then estimate the maximum inundation. The present roughness of the coastal area conditions the capacity of the tsunami inland penetration in case of a future event. The knowledge of the parameters of the possible tsunami together with the coastal topography and roughness make possible to estimate automatically scenarios of probable flooding.

1 Introduction

The recent events of Chile (February 27, 2010) and Tohoku Oji tsunamis (March 11, 2011) highlighted the extensive flooding of the coastal area due to their impact.