

Probabilistic Seismic-Hazard Assessment in Quito, Estimates and Uncertainties

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Introduction

The present study is focused on estimating the probabilistic seismic hazard for the capital city of Ecuador, Quito, the population of which currently exceeds 2 million inhabitants at present. Quito is located at 2800 meters above sea level within the Interandean Depression, bounded by the equatorial line to the north, in an earthquake-prone environment (Chatelain et al., 1999; Fig. 1). The city and its suburbs have developed in a piggy-back basin on the hanging wall of a reverse fault system (Fig. 2) that has been recognized as seismically active in historical, geomorphologic, geologic, and geodetic studies (Soulas et al., 1991; Ego and Sebrier, 1996; Hibschi et al., 1997; Egred, 2009; Champenois et al., 2013; Alvarado et al., 2014).

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