



## Evaluation of Horizontal Seismic Hazard of ABADE, Iran

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### Abstract

This paper presents probabilistic horizontal seismic hazard assessment of Abade, Iran. It displays the probabilistic estimate of Peak Ground Horizontal Acceleration (PGHA) for the return period of 475 and 2475 years. The output of the probabilistic seismic hazard analysis is based on peak ground acceleration (PGA), which is the most common criterion in designing of buildings. A catalogue of seismic events that includes both historical and instrumental events was developed and covering the period from 840 to 2007 is used. The seismic sources that affect the hazard in Abade were identified within the radius of 150 km and the recurrence relationships of these sources were generated by Kijko and Sellevoll [2000]. Finally four maps have been prepared to indicate the earthquake hazard of Abade in the form of iso-acceleration contour lines for different hazard levels by using SEISRISK III.

**Keywords:** Seismic Hazard Assessment, Seismicity Parameters, Abade, Iran.

### 1. INTRODUCTION

Iran, one of the most seismic countries of the world, is situated over the Himalayan-Alpied seismic belt. Abade with the exceeding 200 thousands of people located in the west of Iran, very close to Shiraz. In order to be the province center need a very precise investigation of seismicity and seismic hazard. This paper presents probabilistic horizontal seismic hazard assessment of Abade. Abade is situated on the west plateau of central Zagros Mountain. In order to evaluate the seismic hazard of a region or zone, all the probable seismic sources must be detected and their potential to produce strong ground motion must be checked [1]. The major faults in Abade region are Zagros, Dena, Shahrehabak, Kazerun, Dehshir, South Rokh, Dopolan and Zardkooh. The location of these faults to Abade is shown in Figure 1 respectively.

### 2. SEISMICITY OF ABADE

The seismicity of each region is indicated by the past earthquakes occurred in that region and to obtain the seismotectonic properties, a thorough list of each region's earthquake events must be collected and studied. The list of occurred earthquakes in a radius of 150 km around Abade is given in Table 1, in the end of paper.

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