

Response on the Discussion of “Attenuation Relationships for Iran”

G. GHODRATI AMIRI

Center of Excellence for Fundamental Studies in Structural Engineering, College of Civil Engineering, Iran University of Science & Technology, Tehran, Iran

A. MAHDAVIAN

Abbaspour University of Water & Electricity Technology, Tehran, Iran

F. MANOUCHEHRI DANA

College of Civil Engineering, Iran University of Science & Technology, Tehran, Iran

First of all, we would like to express our appreciation to the authors of the discussion for their kind review of the article. All the concerns mentioned in the discussion are somehow related to the near-source region of large earthquakes, for which there is no claim in the article to cover. As mentioned in the conclusion section of the article, 89 earthquake events, including 307 records, were used to obtain the proposed attenuation relationships for Iran that prove their superiority in comparison with the former studies provided by earlier researchers in this country. The number of the data in this study is less than the number of worldwide data, but it is considerable compared to the number of data in existing attenuation relationships within the country. According to division of seismic regions, soil types, and vertical and horizontal components, the comprehensive nature of these relationships is unique for the region of Iran up to the present time. Furthermore, for the first time, the attenuation relationships of PGV and EPA are attained for Iran. It is not asserted that all the related issues in the field of attenuation relationships in Iran would be covered by this article, but the attenuation relationships presented in this article are better than the similar relationships in this country. Categorically, compared to the field of near-source region of large earthquakes, one of today's prominent issues of earthquake engineering, these relationships have some weak points resulted from lack of required information, which would be ameliorated by more data in future. Consequently, the use of the suggested relationships has been limited for focal distances between 5 and 150 km and surface magnitude values between 4.5 and 7.5.

1. Based on what is inferred from the title of the article, the suggested relationships are derived from the information obtained from Iran and are useful for the country of Iran alone. Beside the worldwide and regional attenuation relationships, there is a constant need for local attenuation relationships in every country. There are

Address correspondence to G. Ghodrati Amiri, Center of Excellence for Fundamental Studies in Structural Engineering, College of Civil Engineering, Iran University of Science & Technology, P.O. Box 16765–163, Narmak, Tehran, 16846, Iran; E-mail: ghodrati@iust.ac.ir