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KEYWORDS

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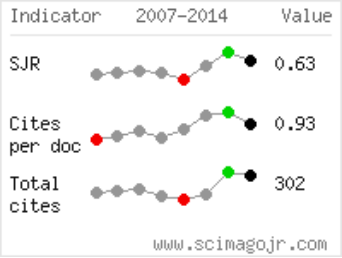

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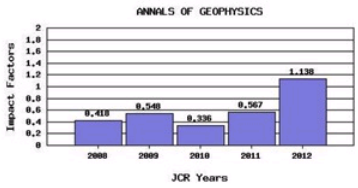

Fast Track

Effects on the groundwater levels of the May-June 2012 Emilia seismic sequence

Marco Marcaccio, Giovanni Martinelli

Abstract

A variety of phenomena were observed in the groundwaters in concomitance with the May-June 2012 seismic sequence that occurred in the Emilia Romagna area. In particular, phreatic wells close to the epicentral area were affected by a sudden increase in water level of up to 4 m. In some cases, the sands of aquifers were ejected outside wells, and >700 liquefaction phenomena were recorded [Bertolini and Fioroni 2012, this volume]. Some automatic stations of the regional well network recorded variations in well levels. These data can be considered useful to understand the relationships between seismic events and the local groundwaters [see also Italiano et al. 2012, this volume]. [...] In 1976, a regional network composed of 330 wells was set up with the purpose of monitoring the groundwater levels using manual techniques. These data have been used for environmental purposes and for water management. In recent years, the monitoring network managed by Agenzia Regionale

Prevenzione e Ambiente (ARPA) has increased the number of wells (to about 600), and chemical analyses are also periodically carried out for environmental monitoring activities. In the past three years, an automatic monitoring network composed of 40 stations was set up and this has allowed the monitoring of the water levels and the temperatures, at a rate of one measure per hour, and to broadcast the data to the host center located in Bologna. [...]

Keywords

Groundwater processes; Groundwaters; Seismic effects; Water level; Hydrology

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