

## **A complete and homogeneous magnitude earthquake catalogue of Iraq**

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**Abstract** A complete and homogeneous magnitude earthquake catalogue spanning the period 1900 to 2010 was created. The catalogue covers the area  $29^{\circ}$  to  $37.5^{\circ}$  N and  $39^{\circ}$  to  $48^{\circ}$  E. Entries in the new earthquake catalogue were cross checked and additions made from various sources of earthquake records to ensure that repetitions are not included in this analysis. Events were considered duplicates if they had a time difference of 10 s or less and space origin difference of  $0.5^{\circ}$  or less. In a given set of duplicate events, an event, which had a magnitude and International Seismological Center source, was retained as the record of the event. The unified magnitude scale, the moment magnitude ( $M_w$ ), was applied throughout the catalogue. The  $M_w$  for 18 events was reported. The  $M_w$  for other events was estimated using empirical relations between  $m_b$ ,  $M_s$ ,  $M_L$ , and  $M_w$ . Magnitude of completeness,  $M_c$ , was estimated using the maximum curvature. It was 4.3  $M_w$ . Finally, a list of 213 events from 1900 to 2010 with  $M_w \geq 4.3$  is presented. The list is considered complete for the period from 1962 to 2010.

**Keywords** Earthquake catalogue . Homogeneous magnitude . Complete catalogue . Iraq