



## **Moment Magnitudes for Small and Intermediate Earthquakes**

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Data recorded by the Cornet network, which is the permanent network of the Geophysics – Geothermy Department of the University of Athens, are used in the present study in order to obtain reliable moment magnitudes. This network is installed around the Eastern Gulf of Corinth, which is one of the most seismic regions of Greece and Europe and has suffered from disastrous earthquakes since the antiquity. The morphology of the Gulf is mainly due to repeated earthquakes that occurred on north-dipping normal faults. In a previous study a relation for the calculation of the duration magnitude  $M_D$  was obtained using a multiple linear regression technique. In the same work the moment magnitude was determined using spectral analysis for events with  $M_D \geq 3.0$ . In the present study more data were processed for the same magnitude range, but for another time period, to test the reliability of the obtained magnitude relations, as well as to ameliorate their precision, by reducing the statistical errors. It is worth noticing that the same relation was obtained in both studies between the moment and the duration magnitude, which were both calculated using recordings of the Cornet Network. Furthermore, the moment magnitude, which is considered to be the most reliable magnitude scale, was calculated for smaller events with  $M_D < 3.0$ . After the determination of the moment magnitude  $M_w$  for both magnitude ranges, relationships were obtained between  $M_w$  and the duration magnitude  $M_D$  that was calculated for the same dataset. Finally, relationships between the moment magnitude  $M_w$ , the local magnitude  $M_L$ , calculated by the National Observatory of Athens, and the body wave magnitude  $m_b$ , calculated by the ISC, are presented.