Seismologists often need to identify scientific articles related to specific seismic events that occurred at particular times or in specific regions. Most advanced bibliographical searches such as Google Scholar would require them to type a text string containing a commonly used name for the earthquake or the region and date it occurred. The search may need to be repeated several times to account for all possible transliterations of a place name in English, several different ways of specifying a date and a variety of names of the area where the earthquake has occurred.

Examples from the Izmit and Düzce 1999 earthquakes

1) Motivation

The ISC Event Bibliography database allows searching for publications linked to seismic events in the ISC Bulletin using event parameters (e.g., location and time of the event) and/or publication parameters (e.g., author name, journal, year of publication). The spatial search is global by default or polygons can be drawn on a Google map. The temporal search can be expanded to 100+ years. Additionally, users can search also for publications in a specific journal and/or author(s) and year of publication.

Approximately 500 titles are included in the ISC Event Bibliography, and about 300 of them are currently checked in routine operations.

2) Searching the Event Bibliography

An excerpt of output of the Event Bibliography search for the 1999 Izmit and Düzce earthquakes are shown. The ISC event identifier provides a link to the ISC Bulletin data for the event (which include location parameters, magnitudes, moment tensor solutions, station data, felt report), whereas the DOI connects to the journal page of the paper. The event header line also shows the total number of publications linked to the event (Article_total) and the upper case Event code (if available) chosen from the most recent name in the literature.

Examples from the Izmit and Düzce 1999 earthquakes

3) Composition of the Event Bibliography

The database is a continuation and extension of the Bibliography of Seismology, which was produced at the ISC between 1965 and 1995 (although ceased in 1995, is still available at www.isc.ac.uk/projects/bibliography/). Exploring the references collected by the ISC since the 1970s, in year 2000 the ISC linked about 4,000 publications in the period 1971-1995 with the ISC event identifier. In order to resume and improve this service, in 2012 we started to link ISC event identifiers to publications that deal with specific seismic events and published in the period 1996 to present. The bibliographic record benefitted also from the ISC-GEM work where many references were added for earthquakes in the first half of last century. About 50 years of publications considering earthquakes or man-made events are available in the Event Bibliography database.

The Event Bibliography database contains ~17,000 references from about 500 titles. In general, most of the events have only a few links to publications, but a few have a considerable amount of articles associated (see plot below). Although the older publications in the database cover the 1950s, some events were also studied several decades after the event occurrence, so that significant earthquakes at the beginning of 20th century are also present (e.g., 1906 San Francisco earthquake).

The spatial distribution of the seismic events coded by number of publications, as well as the top 50 events with most publications associated. Not surprisingly, the events with most publications occurred in Japan, California and the Euro-Mediterranean region. The event name we adopted is considered the most popular for a given event, although different names may be found in the literature. Below the global map the first 50 events with more references associated are listed.

4) Summary

The ISC Event Bibliography includes publications linked to events in the ISC Bulletin. Earthquakes that are part of a catalogue (like the GCMT, EHB, ISC-GEM, etc.) are not linked to the Event Bibliography, nor are the publications that deal with seismicity of specific regions or include large regional earthquake catalogues. We make no judgement of the quality of scientific articles. We continue to include further entries and invite our users to help us with necessary updates (see www.isc.ac.uk/event_bibliography/submit.php). The database is updated on a monthly schedule as new publications become available. We follow several journals in order to encompass a wide range of disciplines related to geoscience and available at various databases. This feature makes the Event Bibliography an attractive tool for multidisciplinary studies and useful for researchers and students from different fields. We expect that this ISC product will also be helpful in facilitating the work of authors, reviewers and journal editors during the entire process of scientific article publication.