

In summary, this book contains a large amount of information which would be very useful in a course on popular seismology. Anyone teaching such a course will want to look at this book. Anyone taking such a course will probably be able to read this book but may need some outside help in digesting some of the terminology and understanding a few of the more difficult concepts.

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Proceedings of the Fifth World Conference on Earthquake Engineering EDIGRAF (Editrice Libraria, Via Giuseppe Charini, 6, 00137, Rome, Italy), 1974, 2 vols. 3013 pp. 30,000 Lira plus postage (Italy, 3,030; Europe, 5,000; Overseas, 8,000)

The recently issued two-volume set of the *Proceedings of the Fifth World Conference on Earthquake Engineering* consists, essentially, of all the papers presented at the last world conference held in Rome in July of 1973. There are approximately 420 papers divided about equally between those 10 pages long and the shorter 4-page papers. The volumes include all the papers which were issued as preprints, a few submitted too late for preprinting, and some 30 discussions. Several of the discussions are categorized as free discussions, and are actually additional papers. Also included in the *Proceedings* is a list of the 850 participants from the 45 countries represented at the conference; an index of the papers, by session; an index of authors; and a brief section containing data about the International Association for Earthquake Engineering, the sponsoring organization. In the same section are the brief speeches given at the opening and closing ceremonies, administrative reports, and a few photographs. This general material comprises 168 pages, bringing the total for the volumes to nearly 3,200 pages. The massive volumes, 3½ in thick, are well-bound in maroon fabrikoid with gold lettering. The papers are reproduced photographically from originals supplied by the authors so there is considerable variation in typography. The quality of both the printing and the paper is very good, however, and the legibility of text, figures and photographs is at least equal to any of the *Proceedings* of previous world conferences.

The world conferences on earthquake engineering have been held approximately every 4 years since the first was held in Berkeley in 1956. They are the only large international gathering of engineers and scientists interested in earthquake engineering so it is informative to compare the *Proceedings* over the years, as is done in Table 1. The rapid growth is obvious from the numbers presented, and that of the last few years is particularly noticeable. The increased participation comes from many countries not previously active in the field as well as from increased activity in countries such as the United States and Japan, where earthquake-engineering problems have been of concern for several decades.

The papers in the *Proceedings* are presented in the same order as the 32 technical sessions of the conference. The sessions concern the following general subject areas: recent destructive earthquakes, earthquake ground motions and instrumentation, dynamics of soils and foundations, response of structures to ground shaking, dynamic tests of structures and structural elements, earthquake-resistant design, seismic risk and zoning, and disaster prevention. Partly as a consequence of the requirements for brevity, many of the papers tend to be summaries of recent work or reports of work in progress so the reader interested in significant detail must expect, in many cases, to consult national journals, laboratory reports, etc. for more extended descriptions of work reported in the *Proceedings*. The breadth of coverage of the papers is excellent within the field and the volumes, like previous editions, serve as a valuable guidepost to the state of earthquake engineering and as a useful indicator of the current interests of the many individuals and groups now involved in earthquake engineering practice and research.

In reviewing such a large set of volumes it does not seem appropriate to give attention to individual papers. The overall impression obtained is one of incremental advances on a broad front, as opposed to a small number of large steps or a few breakthroughs. Clearly, one of the most active areas is the experimental determination of the properties of structures and structural elements. There are a large number of papers dealing with the static and dynamic behavior of beams, columns, joints, shear walls, earth and concrete dams, and buried structures. Another area highlighted by the conference is the growing body of strong-motion records from accelerographs and seismoscopes. Twenty-seven papers deal with recent

TABLE 1
 PROCEEDINGS OF WORLD CONFERENCES ON
 EARTHQUAKE ENGINEERING

Conference	Year	Host Country	No. of Papers	No. of Pages	Vols.
Fifth	1973	Italy	418	3,200	2
Fourth	1969	Chile	146	2,500	4
Third	1965	New Zealand	163	2,500	3
Second	1960	Japan	134	2,200	3
First	1956	United States	41	510	1

destructive earthquakes. A large number of papers deal with problems of earthquake-resistant design of buildings and other structures such as nuclear reactors. Theoretical subjects receiving much attention include the dynamics of soil-structure interaction and the dynamics of nonlinear response of structures. The *Proceedings* also included more papers than previously on such subjects as disaster mitigation, seismic zoning and tsunami warning systems.

Because of the broad coverage of the *Proceedings* and the generally high quality of the technical papers, every university group, government laboratory or consulting firm seriously interested in earthquake engineering should plan to acquire a copy for its library. The cost of the volumes, \$46.50 (plus shipping) according to current exchange rates, may discourage some individuals from purchasing a copy for their personal libraries, but it can be noted that the price per page is very inexpensive compared to most other publications.

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