FOREWORD

It has been widely recognized that the strong motion earthquake records are most essential in the field of earthquake engineering, as they give us basic data on an earthquake input to be considered in the analyses of earthquake responses of structures. When we design structures against earthquakes or predict earthquake risk of existing structures, the ground motion characteristics of the site are considered to be of great importance, and they are largely based on strong ground motions that have been recorded during destructive earthquakes.

Although considerable strong motion records have been accumulated in recent years, including those of destructive earthquakes such as the Tokachi-Oki earthquake of 1968 and the San Fernando earthquake of 1971, we cannot say they are sufficient to estimate the strong ground motion which will occur in a certain site in future earthquakes. The strong ground motion here means not only the maximum acceleration but the characteristics that give the serious effects on the response of structures such as frequency characteristics and duration of intensive motion. As is generally known, these ground motion parameters are affected by the following three factors: the source mechanism, wave propagation characteristics and the site characteristics, and the effect of each factor on the ground motion characteristics cannot be clarified without records obtained by a well-arranged array type seismograph network.

Recent development in the field of seismology enables us to clarify the source mechanism of earthquake origin and the result can be applied to evaluate the ground motion in the low frequency component. And it also gives us some useful knowledge of selecting a suitable site where a destructive earthquake may occur in the near future. Thus, we will have more chance to get strong ground motion records to be analyzed in a suitable way for the above purposes.

It is just at this time that the International Association for Earthquake Engineering plans to have the International Workshop on Strong Motion Earthquake Instrument Arrays to develop a workable plan for the possible future deployment of dense arrays with primary emphasis on ground motion studies.

Observation of strong ground motion is a sort of laborious work and requires patience to the persons engaged. I sincerely hope that the Workshop will be able to make suitable plans and the observation

program along these plans will be a great success through the warm support by many organizations and individuals concerned all over the world.

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