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29 Apr 1981, 9:00 am - 12:30 pm

Session 4: Opening Remarks

K. Rainer Massarsch

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Opening Remarks by K. Rainer Massarsch,
Chairman, Session 4A.

The two sessions on soil-structure interaction have attracted many contributions and indicate the great interest in this topic. The papers deal with different problems such as machine foundations, pile-soil interaction, performance of structures subjected to earthquakes, design of pavements and behavior of buried or surface structures. Several papers present interesting analytical results. In many cases, however, a discussion of their practical application is missing. It is desirable that results of often advanced analytical investigations are presented and discussed in such terms that also practicing engineers can implement them in their work.

At present many complex and refined analytical methods are available. Advanced computer analysis can yield results with high numerical accuracy. On the other hand, the knowledge of the dynamic soils and rock properties is still limited and many times based on empirical methods or engineering judgement. The development of practical field and laboratory methods for the determination of dynamic soil properties is most important.

Another aspect in soil-structure interaction is the need of closer co-operation between geotechnical and structural engineers. Structural engineers many times underestimate the importance of correctly determined dynamic soil and rock properties.

The practical merit of analytical methods in soil-structure interaction depends on the capability to predict field performance. Especially in earthquake engineering only a limited number of case histories is presently available which can be used to check the accuracy of the employed method. Therefore, in the future more emphasis should be given to research projects which compare the predicted behavior of structures in soil or rock with actual performance.