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## **II 1**

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As Prof. Lardy has pointed out in his General Report, experimental methods are valuable contributions to our general calculations. The papers presented show that there is a tendency to use materials which enable us to investigate the behaviour in the elastic range. If this is done in the analysis of models we should be very careful to interpret the results in relation to the real reinforced concrete structure. The latter consists of a non-homogeneous material and may be defined to behave elastically and plastically as well.

There are two problems to be solved; that of strength and that of stability. The strength problem may only be solved correctly if we pass in our tests through the stage of elasticity into plastic deformations to the final rupture.

A research which confines itself to elasticity will be of great value in order to know the qualitative behaviour (f. i. elastic stability) and also to check on elasticity-theories. To that end a material as proposed by Prof. Benito which has been called «litargel» may successfully be applied. As has been stated by him it has a low modulus of elasticity and the deadweight already creates large deformations. As a rule reinforcement is not put into the material. If this is done it should be such a kind of steel that its modulus of elasticity is related to that of the material of which the model is made and which enables the steel to have proportionally large deformations.

To me it appears to be essential to raise this point. If we should try and extend by extrapolation the test results found in the elastic stage to the strength at failure we may be seriously wrong and mistakes might be the result.

#### S U M M A R Y

Research on models made of materials with a low modulus of elasticity will enable to know the elastic behaviour of real structures. One should be very cautious when extrapolating the test-results.

#### R É S U M É

Les essais sur des modèles construits avec des matériaux à faible module d'élasticité pourront permettre de connaître le comportement élastique des structures réelles. Il faut être prudent lors de l'extrapolation des résultats d'essais.

#### R E S U M O

Os ensaios efectuados em modelos construídos com materiais de módulo de elasticidade fraco, poderão permitir conhecer o comportamento elástico das estruturas reais. Convém ter muito cuidado quando se extrapolam os resultados de ensaios.

#### ZUSAMMENFASSUNG

Untersuchungen an Modellen, die aus einem Material mit niedrigem Elastizitätsmodul bestehen, dienen der Erforschung des elastischen Bereiches der wirklichen Konstruktionen. Bei der Übertragung der Versuchsergebnisse auf die Wirklichkeit sollte sehr vorsichtig vorgegangen werden.