

## Summary

**zum Forschungsauftrag IV 1-5-813 des Deutschen Instituts für Bautechnik: Spannungs- und Stabilitätsverhalten von punktförmig gestützten Schalenträgwerken“**

In this report, the complex problem of stability regarding discretely supported cylindrical shells is dealt with. At first, a report is given on extensive experimental investigations. For this new type experimental technique used, the end ring stiffened shells on the continuously loaded edge have been put on a high-pressure hose filled with water and loaded on three equidistant positions of the free edge for the purpose of static clearness in order to achieve a bearing application without constraint and to avoid boundary imperfections.

In addition to the determination of definite test data, it was the aim to verify the angle method for load dissemination proposed by Knoedel-Ummenhofer. It was necessary to make realistic indications about the location of penetrating buckles, fictive load dissemination angles and the buckling stress in dependence on the shell slenderness, the end ring stiffness and the load introduction width. Knowing these data and an experimentally found reduction factor, it is possible to furnish the stability proof for the discretely supported shell using the verification method described in DIN 18 800 part 4.