

## Rock Mechanics Applied to Conventional Mining-Panel Discussion

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### ABSTRACT

*The papers presented at this symposium and the panel discussion given in this session emphasize that there is still a considerable difference of opinion in the way that rock mechanics should be applied to mine design. Dr. Baar questioned from the floor the use of theoretical calculations in mine design in which laboratory properties were used directly as the input parameters for pillar spacing and setting of extraction limits. Dr. Baar proposed in his statement and in earlier writings that actual field measurements of pillar shortening in mines should be used as much as possible in arriving at new designs. The panel discussion then evolved around merits and validity of the two schools of thought, the theoretical or stress envelope concept (represented by panelists Drs. Serata and Dreyer), and Dr. Baar representing the direct measurement school.*

*It was agreed that our profession will have arrived at an*

*acceptable state of the art when both the "calculations" and "field measurements" are in agreement so that we may design on the basis of a sound theory which has been adequately supported by field observations. Much remains to be resolved.*

*The application of the stress envelope concept to the design of mine spans appears to be the most controversial of all topics discussed. The controversy results because theory indicates that larger spans under certain conditions should be more stable than small ones. The application of this concept to evaporites with seams was especially criticized by some discussors who thought that large spans in such geologic settings could pose a mine safety problem. Although the results of the discussion were inconclusive, the fact that they were inconclusive is a signal that we should proceed with caution with new "unprecedented" design methods until the field evidence either validates or disproves the method.*