Predicting the Evolution of Fold-and-Thrust belt

Mechanical predictions

The finite difference theory
- A new approach to predicting the behavior of tectonic plates
- Analyzes the forces acting on the plates
- Predicts the formation of folds and thrusts

Component predictions
- Introducing a new parameter: the stress intensity factor
- Improving the accuracy of the predictions

Field applications

Analogue validation

To validate the theory, an analogue study comparing
mechanical predictions with analogue experiments has been carried out.

Experimental setup:
- A series of analogue experiments were conducted
- The results were compared with the theoretical predictions

Mechanical validation of kinematical models:
- The theory has been applied to different scenarios
- The results have shown good agreement with field observations

Further studies at hand

The internal approach: predicting stress field
- The model predicts the stress distribution within the earth
- Helps in understanding the formation of folds and thrusts

The external approach: predicting thrusting sequences
- A new model for predicting thrusting sequences
- Improves the accuracy of the predictions

Further studies at hand
- The model is being tested for various scenarios
- Results are promising for future applications

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