

# **FINITE ELEMENT SIMULATION OF TIME-DEPENDENT FRACTURE AND FRAGMENTATION PROCESSES IN ROCK BLASTING**

P. J. Digby  
Division of Rock Mechanics  
Lulea University of Technology  
S-951 87 Lulea, Sweden

L. Nilsson and M. Oldenburg  
Division of Computer Aided Analysis and Design  
Lulea University of Technology  
S-951 87 Lulea, Sweden

## **SUMMARY**

A constitutive model for the simulation of fracture and fragmentation processes in rapidly loaded rocks is studied. The model was included in a wave propagation finite element code. The results obtained from two different configurations of explosive charge and reflecting surfaces in a plane strain problem were studied. The evolution of the time-dependent fracture pattern is presented.