

# **INITIAL MAZ DEVELOPMENT I: IMPLEMENTATION OF GROWING CRACKS ON MOVING BOUNDARY SURFACES**

C.K.B. Lee

*Weidlinger Associates Inc.  
Mountain View, CA*

A new idea in the treatment of cracks and fragments in a gasdynamics calculation of an explosion of a cased charge was formulated. The idea is to treat the initiation of cracks as a change in the boundary condition in a blast calculation. By controlling the boundary type in the element-to- element level, we successfully initiated cracks and allowed them to grow to line cracks and eventually form fragments. We first demonstrated the idea in an explosion calculation involving a cylinder of C4. Then we repeated the calculation for a cylinder of Tritonal. The method is sufficiently general that it should be applicable to other Euler codes for explosion calculations.

***Acknowledgement:*** *This research was conducted for the Defense Threat Reduction Agency (DTRA) on contract with the US Army Engineer Research and Development Center (ERDC). Permission to submit this abstract was granted by DTRA and Director, Geotechnical and Structures Laboratory, ERDC.*