**Title:** Mathematical Analysis of Strong Fluid Mechanical Effects in Reacting and Nonreacting Gases

#### Personal Authors

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#### Type of Report

Final

#### Time Covered

From 10/1/85 to 12/31/88

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#### Abstract

The following topics have been studied during this three year period:

1. Numerical Modelling of Initiation and Detonation Wave Stability in Multi-D.

2. Enhanced Combustion through Nonlinear Wave Interaction.

3. New Criteria to Predict Regular Spacing of Reacting Mach Stems.

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All other editions are obsolete.

**SECURITY CLASSIFICATION OF THIS PAGE**

UNCLASSIFIED
This report covers the period October 1, 1985 through September 30, 1988, the three year period of this grant. The research performed under this grant includes mathematical analysis of strong fluid mechanical effects in reacting and nonreacting gases.

The principal investigator has published the following papers with at least partial support by this research grant:


In addition, the following people have been partially or completely supported by this grant:

R. Almgren - graduate student - Ph.D expected 8/89
A. Bourlioux - graduate student - Ph. D. expected 7/90
D. Chae - graduate student - Ph. D. expected 8/89
Y.S. Choi - Post doc 1986-88
M. Dillon - graduate student
R. Dziurzynski - graduate student - received Ph. D. 6/87
K. Lamb - graduate student - summer support
D. Long - graduate student - received Ph. D. 11/86