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Detonation Reaction Zones in Condensed Explosives CRAIG TARVER, Lawrence Livermore National Laboratory — Experimental measurements using nanosecond time resolved embedded gauges and laser interferometric techniques, combined with Non-Equilibrium Zeldovich – von Neumann – Doring (NEZND) theory and reactive flow hydrodynamic modeling, have revealed the average pressure/particle velocity states attained in reaction zones of self-sustaining detonation waves in several solid and liquid explosives. The time durations of these reaction zone processes is discussed for nitromethane, HMX, TATB and PETN. Progress in measuring and modeling the complex three-dimensional structural of these detonation waves is also discussed. This work was performed under the auspices of the U. S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48.

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