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Detonation Electric Effect Measurements in PBX 9501 and Comparison with Hydrocode Calculations CARL JOHNSON, KENDRA VAN BUREN, HENRY ANAYA, LORI LYNCH, JUAN-ANTONIO VIGIL, ERNEST SALAZAR, Los Alamos National Laboratory, FRANCOIS HEMEZ, Lawrence Livermore National Laboratory — Detonation electric effect measurements have been completed during the detonation of small columns of PBX 9501. A novel system was developed using a reference plate and a signal plate with no components installed inside HE parts. Both reference and signal plates are insulated from each other as well as other conductors in the system. The duration of the measured signal agrees well with both simulation and other diagnostics fielded in the experiment. This measurement technique is inexpensive and useful to provide a positive indication of detonation (occurrence and duration) without interfering with other diagnostics present. Additionally, the signal measured is distinct from signals present naturally providing a ‘finger print’ readily distinguishable against background noise.

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