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Kill Assessment for Ballistic Missile Intercepts

S&T Campaign: Assessment & Analysis

Assessing Mission Capability of Systems

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Research Objective

- To develop robust methodologies for determining the lethality of an intercept of a ballistic missile by the Ballistic Missile Defense System (BMDS) and also to determine the type of payload carried by the intercepted ballistic missile.

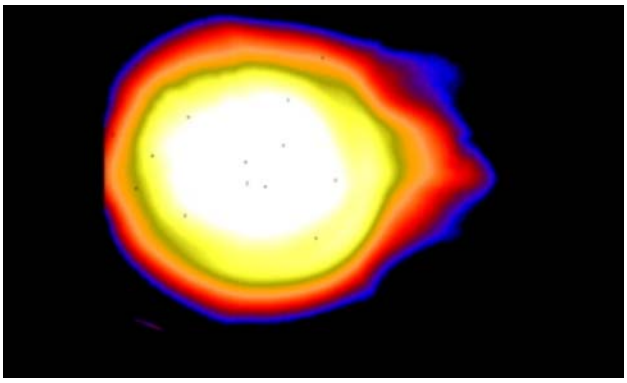

Image of Missile Intercept

Challenges

- There exists a limited amount of key observable data from live-fire intercept test events.
- Develop and characterize novel optical sensors for use in collection of key observable data at live-fire intercept test events.
- Develop and test algorithms that use data from optical sensors to perform the kill assessment function in near real time.

Aegis Ship Firing SM-3 Interceptor

ARL Facilities and Capabilities Available to Support Collaborative Research

- Electronic Warfare Signature Measurement Facility located at White Sands Missile Range, New Mexico.
- Software tools for modeling intercept signatures and effects of atmosphere on these signatures.
- ARL scientists and engineers with extensive experience in the measurement and analysis of missile intercept data.

Multi-Spectral Radiometer on Tracking Mount
During Live-Fire Intercept Event

Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- Design, development, and characterization of novel optical sensors and technologies.
- Expertise and knowledge of shock physics, hydrocodes, and other areas of relevance to hypervelocity impacts.
- Analysis and modeling of hypervelocity impacts.

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