

PROJECTS

The technical staff at CIPPS has been involved in a broad range of projects in the following areas:

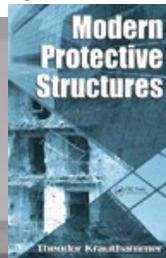
- Blast containment and explosive safety assessment
- Blast and impact resistant buildings, facilities, and critical infrastructure systems
- Blast and fragment loading characterization
- Development of Dynamic Structural Analysis Suite (DSAS), and its validation
- Damage assessment after explosive incidents
- Fortifications and military shelters
- Lightweight blast and fragment shields
- Precision impact testing
- Progressive collapse
- Shock isolation and load transfer limiters
- Structural connections under blast and shock
- Thermodynamic blast suppression
- Ultra High Performance Concrete (UHPC) structures

COURSES

CIPPS staff is involved in training on protective structures with short courses and workshops. Five graduate level courses on protective structures have been developed, and are in the UF curriculum.

Annual Short Course MODERN PROTECTIVE STRUCTURES

<http://conferences.dce.ufl.edu/mps/>



CRC Press,
2008

COLLABORATIVE ACTIVITIES

CIPPS has been involved in collaborative technical activities with government organizations, universities, and industry in the USA and nineteen other countries.

SPONSORS

CIPPS is recognized internationally, and its activities have been supported by various government agencies in the USA and abroad.



FOR MORE INFORMATION CONTACT:

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Center for Infrastructure Protection and Physical Security (CIPPS)



TECHNOLOGY INNOVATION FOR
PHYSICAL SECURITY, AND THE
PROTECTION OF CRITICAL INFRA-
STRUCTURE SYSTEMS FROM
BLAST, SHOCK, AND IMPACT

UF UNIVERSITY of
FLORIDA CIPPS

CENTER FOR INFRASTRUCTURE PROTECTION AND PHYSICAL SECURITY

INNOVATIONS IN PHYSICAL SECURITY, BLAST, SHOCK, AND IMPACT MITIGATION

BACKGROUND

CIPPS was established at the University of Florida under the directorship of Dr. Theodor Krauthammer in August 2006 in partnership with the U.S. Army Engineering Research and Development Center (ERDC). The Center's missions are:

To mobilize and lead the US academic community, to establish comprehensive long- and short-term research and development activities in protective science and technology, to ensure the safety of personnel and facilities under various explosively-induced hazards and evolving threats, and to transfer the technology through education, training, and advising activities.

A special emphasis of CIPPS is in civil and structural engineering, computational mechanics and dynamics, and the behavior of structural systems under severe loading environments. These activities are handled by an experienced multidisciplinary technical and scientific staff.

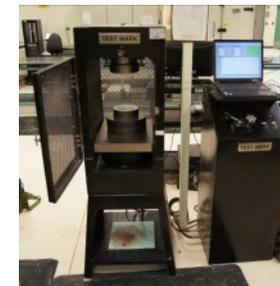


EXPERTISE AND ACTIVITY AREAS

The areas of technical expertise at CIPPS include:

- Antiterrorist, force protection, and physical security assessment
- Building enclosures under blast, shock and impact
- Blast, fragment, and ballistic resistant closures
- Blast resistant building systems
- Blast suppression
- Computer modeling, simulation, and validation
- Containment and storage facilities for hazardous materials, and energetic environments
- Evacuation, rescue, and recovery operations
- Explosive safety for industrial facilities
- External and internal explosive load definition
- Fortifications, and hardened facilities
- Ground shock, medium-structure interaction, and underwater explosions
- Materials and component behavior under blast and impact
- Multi-hazard threat assessment and mitigation
- Nuclear and conventional weapons effects
- Progressive collapse, and post-event damage assessment
- Precision impact testing
- Security barriers and gates
- Structural behavior, design, performance, and safety for blast, shock and impact mitigation
- Structural vibrations, damping, and shock isolation systems
- Survivability and fragility of land- and sea-based systems and facilities
- Threat, risk, and hazard assessment
- Technology transfer, education, and training
- Transportation infrastructure protection
- Ultra High Performance Concrete (UHPC) structures

EXPERTISE (Cont.)



Cylinders and Beams under Static and Impact Loads

PERSONNEL

The technical and scientific staff at CIPPS includes engineers and scientists with advanced academic degrees in aerospace engineering, civil engineering, mechanical engineering, mechanics and structural engineering. CIPPS personnel are guided by Dr. Theodor Krauthammer, who has more than thirty five years of engineering and scientific experience in the areas of physical security and the mitigation of blast, shock, and impact effects.