

Protect National Infrastructures Against Disasters; Damage Assessment and Mitigation



Center for Extreme Events Research
Affiliated Faculty

CURRENT RESEARCH

Computer simulation and facilities to assess damages in infrastructures and bio-systems during extreme events

The attacks on September 11, 2001 were an extremely tragic event, and never before had we imagined two such prominent US landmarks and part of the Pentagon coming crumbling down before our eyes due to terrorism. Infrastructures, whether buildings, dams, or bridges, are often built with natural disasters in mind, but events like 9/11 have reinforced the need to design for man-made disasters, including terrorist attacks, incorporated into the construction processes. The Center for Extreme Events Research at University of California, San Diego (UCSD), advances the engineering research essential to protect critical infrastructure and bio-systems from extreme hazardous events. Leveraging interdisciplinary expertise to assess damage in extreme events such as mining explosions, landslides, car crashes and many other natural and man-made disasters, the center is well equipped not only to offer better protection of infrastructures but also to provide structural damage mitigation after events.

With experts spanning disciplines in structural engineering, mechanical and aerospace engineering, radiology, and mathematics, the center is home to the only "blast simulator" available in the field. This unique, explosive-free testing facility can shed light on designing and retrofitting structures to protect from damage, and provide data for creating enhanced computer simulations that help predict effects of larger-scale events. Led by Faculty Director Dr. Jiun-Shyan Chen, the center partners with many national defense and energy laboratories and industries to: 1. Protect the nation's built infrastructure; 2. Provide rapid assessment of damage after disastrous events using simplified and reduced-order computational and...

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AFFILIATION

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AWARDS

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RESEARCH AREAS

Natural Disasters / Emergency, Technology, Computational Sciences / Mathematics, Materials Science / Physics

FUNDING REQUEST

Your contributions will support the UC San Diego Center for Extreme Events Research as it prepares to respond to the needs of society under extreme circumstances. Donations will help fund personnel, equipment including both testing and computation facilities, as well as technicians. Partner with the Center to develop better ways to protect infrastructures and people from otherwise unforeseen disastrous events!

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