

DEPARTMENT OF MECHANICAL ENGINEERING WILLIAM MAXWELL REED SEMINAR SERIES

Computational Armor Research at the US Army Research Laboratory: Motivation and Validation

Dr. Andrew J. Porwitzky
Research Physicist
US Army Research Laboratory
Aberdeen Proving Ground, Maryland

Abstract: The modern Warfighter faces a range of ever-evolving threats on the battlefield in ongoing conflicts overseas. Development of vehicle armor to counter these threats is a significant area of study at the US Army Research Laboratory in Aberdeen, Maryland. As part of that effort, highly sophisticated computational tools and methods are employed to study threat-armor interactions on large scale multi-core supercomputers. By having accurate computational tools we can greatly reduce the time required to test and iterate over proposed armor technologies, allowing for full scale experimental testing to be conducted on only the most promising surviving computational cases. In order for a code to be accurate, it must first be validated. Presented in this talk are a few modern anti-vehicle threats faced in ongoing conflicts as well as a suite of validation problems employed by the Army to simulate physical realms of interest to threat-armor interactions, as well as an overview of Army computational resources.

Bio: Andrew J. Porwitzky received a Bachelor of Science in Physics from the University of Vermont in 2004. In 2008 he received a PhD in Aerospace Science at the University of Michigan. After a nine month postdoctoral position at the US Army Research Laboratory in Aberdeen, MD he was hired into his current role as a Research Physicist working on theoretical and computational modeling of plasmas and magnetohydrodynamic phenomena related to Army applications. Beginning in 2011 he was granted a position as Visiting Researcher at Sandia National Labs in Albuquerque, NM in the Computational Shock and Multiphysics group and became the first and only non-DoE member of the ALEGRA development team.

Date: January 24, 2012
Place: Room 323 CRMS

Time: 3:30 pm to 4:30 pm (refreshments 3:15 pm)
Contact: Dr. James McDonough 257-6336 x 80657

Meet the speaker and have refreshments
Attendance open to all interested persons