

MAGIC 2014 Schedule

Tuesday, December 9th 2014

Research Talks

Location: Room 2188 of the Mechanical Engineering building

08:00 – 08:30

Guest check in

[Continental Breakfast]

08:30 – 08:45

Introductions, Logistics and Goals of the Meeting

Professor Dan Negrut, UW-Madison

08:45 – 09:45

Keynote Talk: “Vehicle Mobility - Goals & Challenges”

Dr. Paramsothy Jayakumar US Army TARDEC: 45 min talk + 15 min Q&A

09:45 – 10:15

Talk: "Benchmark Problems For Machine-Ground Interaction Simulations"

Mr. Mike McCullough, British Aerospace Engineering (BAE) Systems

10:15 – 10:30

Coffee Break

10:30 – 11:00

“Resistive Force Theory Models of Locomotion on Granular Media”

Tingnan Zhang or Professor Daniel Goldman, Georgia Tech

11:00 – 11:30

“Overview of the ADAMS Software - New Features and Future Developments”

Mike Collingridge, Director of Development - System Dynamics, MSC.Software

11:30 – 12:30

Brownbag Lunch (catered)

[Marty Gustafson – UW Online Masters of Eng. Degree in Data Analysis: 5 m.]

[Peter Qian, Statistics Professor – Tools for Stat. Analysis & Dsgn. of Exp.: 5 m.]

[Radu Serban – overview of Wednesday’s Chrono hands-on module: 10 m.]

[Dan Negrut – overview of US Army Rapid Innovation Fund project: 10 m.]

12:30 – 13:00

“Modeling, Simulation, and Validation of Tracked Vehicles”

Dr. Holger Haut, Simertis Gmbh, Germany

13:00 – 13:15

Coffee Break

13:15 – 14:15

Keynote Talk: "Modeling & Simulation for Tank R&D Including Vehicle-Ground Interaction"

Dr. Koki Jumonji, Head, Turret Chassis & Propulsion Research Section, Technical Research & Development Institute, Ministry of Defense, Japan: 45 min talk + 15 min Q&A

14:15 – 15:00

Keynote Talk: "Virtual Prototyping at Caterpillar"

Mr. Keven W. Hofstetter, Caterpillar Inc.

15:00 – 15:45

Networking Break

15:45 – 16:15

"Structure-Based, Minimal Coordinate Dynamics for Mobile Robotics"

Dr. Abhinandan Jain, Jet Propulsion Laboratory-NASA

16:15 – 16:45

"Flexible Body Simulation in MBDyn"

Professor Pierangelo Masarati, Politecnico di Milano

16:45-17:15

"Recent Developments in Computational Mechanics with Applications to Terrain Modeling"

Professor Eftychios Sifakis, Computer Science, UW-Madison

17:15-17:45

"Solver Technologies in RecurDyn"

Dr. Graham Sanborn, FunctionBay, South Korea

17:45 – 18:30

Student live demos in Simulation-Based Engineering Lab – Room 4150ME

18:30 – 20:30

Happy Hour and Dinner at Steenbock's on Orchard (Wisconsin Institute for Discovery)

****Note: The session on Wednesday is open to everyone. The Chrono::Vehicle tutorial session on Thursday is for our Army collaborators only.**

Wednesday, December 10th

8:00 am to 5:00 pm--Project Chrono Overview

Location: Room 3210 Mechanical Engineering

(Tasora, Serban, Melanz, Taylor)

1. Description of the Chrono suite and of the Chrono::Vehicle vertical app
2. Validation, software, documentation, and support
3. Using Chrono for multibody dynamics - Basic features
4. Using Chrono for multibody dynamics - Intermediate and Advanced features
5. Hands-on tutorial: modeling and simulation of a slider-crank mechanism

Thursday, December 11th 2014

8:00 am - 5:00 pm, Chrono::Vehicle Tutorial (for Army collaborators)

Location: Room 2270 Mechanical Engineering

(Serban, Tasora, Melanz)

1. Using Chrono::Vehicle for wheeled vehicle modeling, simulation, and visualization
2. Hands-on tutorial: vehicle modeling using templates
3. Hands-on tutorial: creating new subsystem templates