

『The 2012 THUMS USA Users Meeting』 Invitation and Organization

JSOL is delighted to announce The 2012 THUMS USA Users Meeting. THUMS, the Total Human Model for Safety for use with LS-DYNA^(R) is being rapidly adopted by users worldwide. We invite you to join us and share in THUMS technical information.

Toyota will present latest validation results and model improvement plans. In addition we will introduce the ongoing THUMS research at CSRC (Toyota Collaborative Safety Research Center).

■ Outline

Organizer	JSOL Corporation http://www.jsol.co.jp/english
Date	June 6th(wed), 2012
Venue	Hyatt Regency Dearborn Pierce Arrow (Second Floor) http://www.dearborn.hyatt.com/hyatt/hotels/index.jsp?null
Objective	Shearing THUMS related technology and its application.
Participation	In general we ask that participation be limited to THUMS users.
Registration Fee	Free
Expected number of participants	Approximately 30
URL	http://ls-dyna.jsol.co.jp/en/event/thums2012.html

■ Program

Time	Title
11:00	Opening
11:10	Development of New Generation THUMS Mr. Tsuyoshi Yasuki, Toyota Motor Corporation
11:40	Development of Active THUMS with multiple muscles in human whole body Dr. Masami Iwamoto, Toyota Central R&D Labs., Inc.
12:10	Lunch
13:10	THUMS positioning setup in LS-Prepost Mr. Philip Ho, Livermore Software Technology Corporation
13:40	Toyota's Collaborative Safety Research Center Mr. Chuck Gulash, Toyota Collaborative Safety Research Center
14:10	Injury Metric Development for the THUMS Model Dr. Joel Stitzel, Wake Forest University
14:40	Closing address

Note: The program is subject to be changed.

■ Registration

Please contact your distributor of THUMS as below.

■ Venue

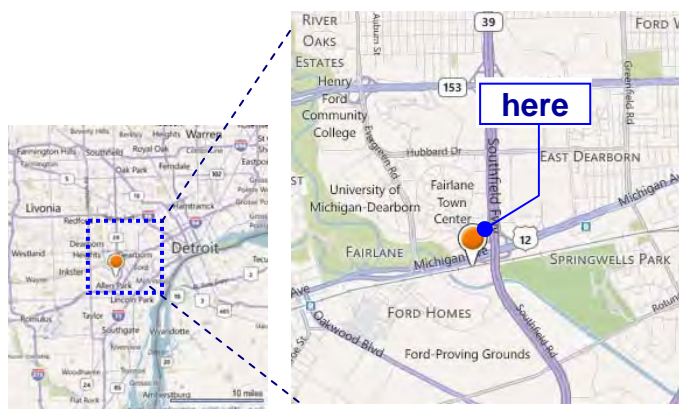
Hyatt Regency Dearborn

Pierce Arrow (Second Floor)

<http://www.dearborn.hyatt.com/hyatt/hotels/index.jsp?null>

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Michigan, USA 48126-2793
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* Hyatt Regency Dearborn where The 12th International LS-DYNA User's Conference takes place.



■ Abstract

Time	Title
11:00	Opening
11:10	Development of New Generation THUMS Mr. Tsuyoshi Yasuki, Toyota Motor Corporation
	The new generation human body FE model “THUMS Version 4” has been developed to simulate internal organ injuries that are difficult to predict with the current crash test dummies. The modeling techniques of internal organs such as precise representation of their geometry and connections based on super-accurate CT-scan images helped greatly improve the accuracy of injury prediction. The validity of the completed model was examined by comparing its mechanical responses comparing to the previous test data in the literatures. The model was also examined in a vehicle frontal crash simulation to verify its numerical stability up to the end of crash phenomenon.
11:40	Development of Active THUMS with multiple muscles in human whole body Dr. Masami Iwamoto, Toyota Central R&D Labs., Inc.
	We had developed a human body model THUMS with Toyota Motor Corporation to analyze motions and injuries of human body in impact situations. The THUMS has relatively high biofidelity which was validated using human cadaveric test data. However, there are some reports that muscle activity in posture maintenance, bracing, and evasive maneuvers of braking and steering before impact might affect motions and injuries of human body after impact. Therefore, we have developed an Active THUMS with multiple muscles in human whole body to investigate effects of muscle forces in pre-impact on the motions and injuries of human body. In this presentation, we will show an overview of the Active THUMS and some simulation examples using the Active THUMS.
12:10	Lunch
13:10	THUMS positioning setup in LS-Prepost Mr. Philip Ho, Livermore Software Technology Corporation
	In order to position the THUMS dummy using LS-DYNA simulation, it is desirable to have a tool to setup the keyword file with all control cards and boundary conditions along with the THUMS model itself. The progress and status of this setup tool for THUMS positioning in LS-Prepost will be presented. Different methods that have been experimented and tested also will be discussed.
13:40	Toyota’s Collaborative Safety Research Center Mr. Chuck Gulash, Toyota Collaborative Safety Research Center
	CSRC works with leading North American universities, hospitals, research institutions and federal agencies on projects aimed at developing and bringing to market new safety technologies. There are nineteen research projects established aimed to benefit the entire industry including modeling tools, crash avoidance technologies, driver distraction and others. This presentation will provide an overview of CSRC and the research projects.
14:10	Injury Metric Development for the THUMS Model Dr. Joel Stitzel, Wake Forest University
	To better relate the THUMS response during a motor vehicle crash simulation to risk of injury, our group has developed several injury risk metrics. These metrics are intended to mirror current measurement capabilities of Anthropometric Test Devices (ATDs) and leverage the anatomic detail of the model to supplement these standard measurements with additional injury risk data. Previous work on this effort in earlier versions of THUMS will be discussed as well as current work on simulating real world motor vehicle crashes with THUMS version 4. The results of this work have demonstrated the ability of these enhanced metrics to more fully describe the occupant response during an impact event. Specifically, strain metrics within the bones and organs provide more detail on the potential location of injury through matching the finite element model results to actual patient radiology from the simulated cases.
14:40	Closing address

Note: The program is subject to be changed.

■ Contact

JSOL Corporation

Engineering Technology Division

The 2012 THUMS USA Users Meeting Secretariat

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