

FEA Information <http://www.feainformation.com>

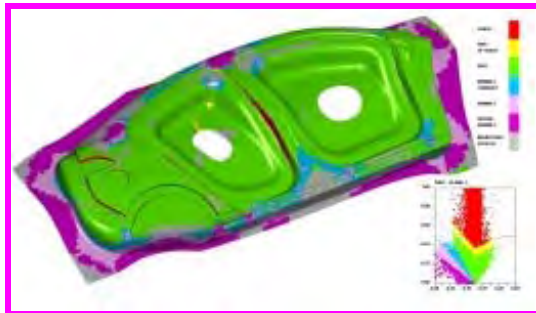
Engineering Journal and Website Resource



Johannes and Stavroula
4th PhilonNet CAE Conference Athens



LS-DYNA® With
Microsoft® Windows® HPC Server 2008



INC Solver - For DYNAFORM 5.8+
Expanding the Usability of DFE



Shanghai Hengstar Technology Co. Ltd.
LS-DYNA Training Center of Excellence

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Announcements

CADFEM User Meeting Change

Now will be held on November 3rd – 5th in Aachen, Germany

FEA Information Inc. New Participant Announcement Shanghai Hengstar Technology Co. Ltd. -

We are pleased to announce as a Platinum Participant Shanghai Hengstar Technology Co. Ltd. - LS-DYNA Training Center of Excellence

LSTC Announcement:

LSTC has sponsored a special area for their Conference. We will be posting special articles on their conference Sponsors.

ETA Announcement:

To expand the usability of DYNAFORM's Die Face Engineering (DFE) module, INC is a finite element analysis (FEA) solver designed for sheet metal forming simulations. ETA is additionally is a sponsor at the 11th International LS-DYNA conference and continues to work closely with LSTC.

Sincerely,
Marsha J. Victory, President,
FEA Information Inc



Jack – our 2,000 lb. Percheron



FEA Information
Platinum
Participants

OASYS Ltd: http://www.oasys-software.com/dyna/en/	JSOL Corporation: http://www.jsol.co.jp/english/cae	HP: http://www.hp.com/
ETA: http://www.eta.com	INTEL: http://www.intel.com	ESI Group: http://www.esi-group.com
BETA CAE Systems S.A.: http://www.beta-cae.com	LSTC: http://www.lstc.com	SGI: http://www.sgi.com
NEC: http://www.nec.com	Voltaire: http://www.voltaire.com	Shanghai Hengstar Technology Co. Ltd. LS-DYNA Training Center of Excellence http://www.hengstar.com



FEATURED PAPER
By J. Rasico - FTSS

DYNALOOK
Courtesy of
LSTC & DYNAmore

The site presents papers from European and International LS-DYNA User Conferences and papers provided by other users. The papers are accessible via a search functionality. <http://www.dynalook.com>

Among the many papers you can locate publications: J. Rasico - FTSS

Developments in Finite Element Safety Models

J. Rasico – FTSS

FTSS has been providing Finite Element models to the safety community for over a decade. This has resulted in an expansive family of; commonly used Anthropomorphic Test Devices (ATDs), dummies primed for future regulation, and complimentary safety tools for the examination of unique protection systems, such as ejection mitigation.

In conjunction, the last 10 years have seen a continuous demand for increased quality and functionality of existing dummy model products, and new tools to help safety engineers address the evolving requirements of regulatory bodies and consumer agencies. While and expanding database for development and validation has helped dummy

models reach further levels of maturity and accuracy, close involvement with physical product design and development has allowed for early adaptation of hardware updates. Furthermore, collaborative efforts within the automotive community have become a key component of new model development. With this approach, new models target the upfront requirements of OEMs and their suppliers.

Further improvement of existing models and end-user participation for the development of new models is leading to more powerful ready-to-use models for safety engineers in the Finite Element Community

<http://www.dynalook.com/european-conf-2009/E-I-03.pdf>

FTSS will be hosting a booth at the 11th International LS-DYNA Users Conference to be held June 6th – 8th <http://www.ls-dynaconferences.com>



Shanghai Hengstar Technology Co. Ltd.

LS-DYNA Training Center of Excellence

**Shanghai Hengstar Technology Co. Ltd.
LS-DYNA Training Center of Excellence**

by: Anthony Giaccana

Shanghai Hengstar Technology Co. Ltd. was founded in 2009 by Hongsheng Lu. One of his goals in returning to China was to create a China CAE Support and Training Center for LS-DYNA. Additionally, it would promote training for the LSTC software suite of products, through customized training programs, as well as one-on-one at customer sites.

Hengstar, during 2009 proved it is on its course by providing leadership in training course development, and delivering comprehensive programs and services that were responsive to the needs of CAE engineers in China for their LS-DYNA needs.

Whether referred to as a Competency Center, or Capability Center, HengStar is fast becoming known in China as the LS-DYNA Training Center of Excellence, with continuing courses taught by LSTC Engineers and other CAE senior experts.

Since its official launch in 2009, among HengStar's beginning achievements, has been delivering the first training course taught in China by Paul A Dubois, "Crashworthiness Simulation using LS-DYNA"

Marsha J. Victory, Global Business Administrator for LSTC, "It is with great

admiration that Hongsheng not only returned to China to assist LS-DYNA engineers, but that he brought the first Crashworthiness Simulation using LS-DYNA course, taught by world known expert, Paul A. DuBois. I anticipate Shanghai Hengstar Technology Co. Ltd. to become a Center of Excellence for LS-DYNA training and support."

As part of its expanding commitment to helping the CAE Engineer, Hengstar will shortly announce the courses through 2010. It is hoped that Hengstar will serve as a training and knowledge sharing facility and is expected to continue growth with the highest standards of achievement and training.

A critical component of Hongsheng's future investment is the transfer of expertise and training lessons from LSTC in English, into material accurately translated into Chinese.

For software interfacing to or complementing LSTC's products, fortunately, China has a great deal to offer with respect to local expertise. In the future these additional courses and local teachers will be invited, to bring their expertise to Hengstar training courses.

Hengstar's long term goal is to have a Chinese training facility that is not only taught from the west, but to create an autonomous operation that meets the same quality standards as LSTC, California training classes, with training from experts within China, LSTC and worldwide.

Hengstar is closely cooperating with Livermore Software Technology Corporation in Livermore, California, US to become the first training center of excellence in China to receive Livermore Software Technology certification.

For information contact:

Hongsheng Lu

hongsheng@hengstar.com

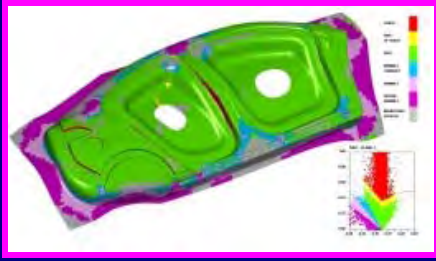
Shanghai Hengstar Technology Co. Ltd.

Room 11205, Building No.11

Guoshoujing Road, Zhangjiang High Technology Area

Shanghai 201203

<http://www.hengstar.com>



INC Solver - For DYNAFORM 5.8+

Expanding the Usability of DFE

As tough market competition demands faster cycle times, lower software costs and lower user qualification thresholds, Engineering Technology Associates, Inc. (ETA) has developed a new tool, the INC Solver, to address these needs.

To expand the usability of DYNAFORM's Die Face Engineering (DFE) module, INC is a finite element analysis (FEA) solver designed for sheet metal forming simulations. It provides a value solution for customers who are looking for rapid die design and a virtual tryout tool that generates quick results, is easy to master, but does not sacrifice accuracy.

Tagged as "Best Practice" within INC, the solution pre-populates a set of default parameters produce accurate results. This feature provides a guided process for inexperienced users; while more advanced users can adjust these default parameters to their preferences. Also, INC Solver requires very few manipulations overall to simulate a typical 3-piece draw analysis.

For die face design virtual tryout, the solver offers capabilities for simulating gravity-loading, binder-wrap, crash-form, single-action and double-action

draw die, as well as springback prediction and lancing operations. INC solver supports non-conforming CAD surfaces and its fusion-fission approach handles mesh adaptivity effectively.

INC takes advantage of Intel's latest multiple-core computing platform to make computing very affordable. For example, a 4-Core system costing under \$1500 can process the most complicated large bodyside panel simulation in less than 50 minutes.

In addition to DFE, DYNAFORM includes three other modules, including Blank Size Engineering (BSE), LS-DYNA-based Formability Simulation (FS) and LS-DYNA-based Die System Analysis (DSA). DYNAFORM is a complete die system simulation solution which allows organizations to bypass soft tooling, reducing overall tryout time, lowering costs, increasing productivity and providing confidence in die system design. For more information, please visit www.dynaform.com.

[Download INC Brochure](#)

Contact: ETA, Inc. Jeanne He
(248) 729-3010 x234

<http://www.eta.com> - admin@eta.com



Top Crunch Benchmarks

Submitted March 04, 2010

TOP Crunch for LS-DYNA software benchmarks. The TopCrunch project was initiated to track the aggregate performance trends of high performance computer systems and engineering software. Instead of using a synthetic benchmark, actual engineering software applications are used with real data and are run on high performance computer systems.

For complete information on the following benchmark visit <http://www.topcrunch.org>

Vendor/Submitter: HP/IEE S.A -

Computer /Interconnect	Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
Z800/Gigabit Ethernet	Intel Xeon W5580 3.2GHz	1 x 2 x 4 = 8	1016	neon refined revised

BENCHMARK DETAILS

- Computer System: Z800
- Vendor: HP
- CPU Interconnects: Gigabit Ethernet
- MPI Library: openmpi-1.4.1
- Processor: Intel Xeon W5580 3.2GHz
- Number of nodes: 1
- Processors/Nodes: 2
- Cores Per Processor: 4
- #Nodes x #Processors per Node #Cores Per Processor = 8 (Total CPU)
- Operating System: CentOS 5.4
- Code Version: LS-DYNA
- Code Version Number: mpp971_s_R4.2.1

Benchmark problem:

neon_refined_revised

- Wall clock time: 1016
- RAM per CPU: 2
- RAM Bus Speed: 1333
- Benchmark Run in Single or Double Precision: Single
- Benchmark Run SMP or MPP: MPP
- System Dedicated/Shared: Dedicated
- Location: Contern, Luxembourg
- Submitted by: Edmund Marx
- Submitter Organization: IEE S.A



LS-DYNA®

With

**Microsoft®
HPC Server 2008**

Microsoft® - Plenary Speaker & Banquet Sponsor of the 11th International LS-DYNA Users Conference – June 06-08th 2010

LS-DYNA® with Microsoft® Windows® HPC Server 2008

Windows HPC Server 2008 provides a productive, cost-effective, and high-performance computing (HPC) solution that runs on x64-bit hardware. Windows HPC Server 2008 can be deployed, managed, and extended using familiar tools and technologies.

The HPC platform from Microsoft, called Microsoft® Windows® HPC Server 2008 is a productive, cost-effective, scalable, and easy to use solution that is capable of performing intensive calculation of detailed models at enhanced processing speeds. By running LS-DYNA® on Windows® HPC Server, you can shorten the amount of time and money that is spent on design and verification, enabling you to gain a competitive edge in the marketplace.

Benefits:

- Industry-leading, multi-field simulation tools
- Simplified HPC platform
- Lower lifecycle costs
- Decreased time to market
- Enhanced security

The Combination: The LS-DYNA® suite and Microsoft® Windows® HPC Server 2008 accelerate calculation speed and reduce time to insight for a wide range of industries and applications.

Windows® HPC Server provides a powerful platform for HPC, while LS-DYNA® provides a flexible simulation solution for finite element analysis. Together, users receive a simple to use, cost-effective, and robust parallel processing solution for the simulation of product testing and design that would otherwise require large system and IT resources.

Application Areas: LS-DYNA® combined with Microsoft® Windows® HPC Server 2008 high-performance computing platform provides an accelerated solution for engineers, mathematicians, and designers in many industries, including:

- Automotive - Analyze vehicle designs and accurately predict structural integrity in a collision and the effects on the occupants
- Metal Forming - Accurately predict stresses and deformations that will occur during the manufacturing process
- Aerospace - Simulate bird strike, jet engine blade containment, and structural failure

More information:

<http://www.microsoft.com/hpc/en/us/product-information.aspx>



Johannes and
Stavroula,

founders of
PhilonNet

4th PhilonNet CAE Conference
Athens

17 June 2010

Drive Innovation With Simulation

By: FEA Information Inc., staff writer, Stacey Della Femina

PhilonNet Engineering Solutions is the direct distributor of Livermore Software Technology Corporation (LSTC) and Engineering Technology Association (ETA).

With the growing choice to use LS-DYNA, LS-PrePost, LS-OPT and the LSTC Dummy and Barrier Models with the universities and industries, as well as ETA's VPG and DYNAform products, both companies will be attending the conference and give presentations on their family of products.

Additionally, LSTC to assist sponsoring the PhilonNet conference is offering a number of Limited Licenses of LS-DYNA and suite of software products for their choice of winners.

Roger Grimes, Software Developer for LSTC, will be traveling to Athens to present Implicit Mechanics in LS-DYNA..

Roger will be providing an overview of the extensive set of capabilities for Implicit Mechanics in LS-DYNA, including

- Static and Dynamic Time Simulation
- Inertia Relief
- Vibration and Buckling Analysis
- Constraint and Attachment Modes
- Linearized Parts

These capabilities will be demonstrated with examples from aerospace, automotive and metal forming applications.

Dr. Wayne Mindle, Technical Sales & Marketing at LSTC, "We are pleased to have a representative from the US answering questions and meeting our customers in Greece as well as our future customers. I feel this will give the attending engineers a good base of knowledge to use LS-DYNA."

Representing ETA will be Abe Keisoglou, President, ETA is well known for its world class software DYNAform and VPG

Abe will be introducing Accelerated Concept to Product process (ACP).

- There are many key benefits in using ACP in the Design Process. These include a demonstrated capability to reduce product development costs by 35-40%, reduce product mass by approximately 20%, improve product performance (stiffness, NVH, crash/safety, durability) as well as reduce manufacturing and tooling cost through part consolidation.
- The ACP Process is a proprietary, performance-driven, holistic product design development method which is based on design

optimization. ACP incorporates the use of multiple CAE tools in a systematic process to generate the optimal design solution.

- Contrary to conventional methods where just one or a few design concepts are evaluated, using the ACP process, multiple load conditions are evaluated simultaneously for hundreds of design concepts. The resulting concepts are detailed, analyzed and optimized. This ensures that final product meets all

performance, mass and cost targets.

- Significant efficiencies and product improvements are achievable using the ACP Process, whether it is applied on a component, sub-system or full-system. In this practice, ETA's expert team revisits process requirements and uses the most advanced technology, tools and materials to give the client the lightest possible structure.

PhilonNet <http://www.philonnet.gr>



d3View Blog

by
Suri Bala

What is D3VIEW ?

- Enterprise quality data manager for LS-DYNA
- Web front end for job submission and tracking
- Template driven post processing
- Web enabled time history plotter

What can you do with D3VIEW?

- Manage Projects, Tasks and Milestones
- Store and manage all data from LS-DYNA
- Compare simulations
- Collaborate simulation data

D3VIEW - Behind the Scenes

- Object Oriented Programming (OOP)
- Role Based Access Control (RBAC)
- Browser Compatible Charting
- jax powered

About: d3VIEW is a web-based tool that extracts information from LS-DYNA generated "d3hsp" files and presents it in a concise, user-friendly format.

Background: The tool was developed as a hobby project by Suri Bala to ease

the review of user provided input and result files in a concise and efficient manner. Suri Bala works full-time at Livermore Software Technology Corporation.

Outlook: D3VIEW is continuing to grow into a more sophisticated tool with the release of Version 2.0 scheduled to be released before the end of year 2007. We are planning to have a hosted application to manage simulation data which will be available at no cost to users worldwide. You can view here for d3View 2.0 features.

Blog: This blog was established to track the development of d3VIEW and publish interesting articles related to LS-DYNA for the benefit of users worldwide. We are constantly looking to post the latest information about features and products that complement LS-DYNA. If you have anything to share, please don't hesitate to contact us using the feedback form on <http://www.d3VIEW.com> .



Oasys and nHance Engineering Solutions Pvt Ltd

3rd Series Oasys LS-DYNA Update Meetings in India Training India

nHance Engineering Solutions Pvt. Ltd. offers sales, consulting, training and services for LSTC's suite of software in India.

Pune – Tuesday, 27th April 2010 – The Pride Hotel, Shivajinagar, Pune.
Bangalore

Thursday, 29th April 2010 – The Taj Vivanta, Whitefield, Bangalore.

Oasys Ltd and nHance Engineering Solutions Pvt Ltd are pleased to announce the 3rd series of Oasys LS-DYNA Update meetings at Pune and Bangalore. The meeting in Pune is on 27th April 2010 and the one in Bangalore is on 29th April 2010.

These free Update Meetings are full-day events covering both current and future developments of both LS-DYNA and Oasys software. It is also an opportunity for the users to directly interact with developers of the software.

Presentations will also cover developments in FE dummy and barrier models, FEMZIP, JSTAMP & DIGIMAT.

We are pleased to welcome our Guest Speakers Mr. Ganesh Gadekar of TATA Motors Ltd & Mr. Vijay Kotak of Mahindra & Mahindra Ltd for the event in Pune and Mr. Saleem Mohammed of General Motors Ltd & Dr. Anindya Deb of Indian Institute of Science for the event in Bangalore.

Registration

Please send your registration to this event by email to india.support@arup.com with your name, company/affiliation, telephone number and your Location (Pune/Bangalore) preference.

Venue

The event in Pune will be held at The Pride Hotel, located in the heart of the business district.



The Pride Hotel - Best Western Pride Hotel, 5 University Road, Shivajinagar, Pune- 411005, India.

+91-20 25534567/25530444



The event in Bangalore will be held at The Taj Vivanta, Whitefield which stands right at the main entrance to the International Tech Park, Bangalore.

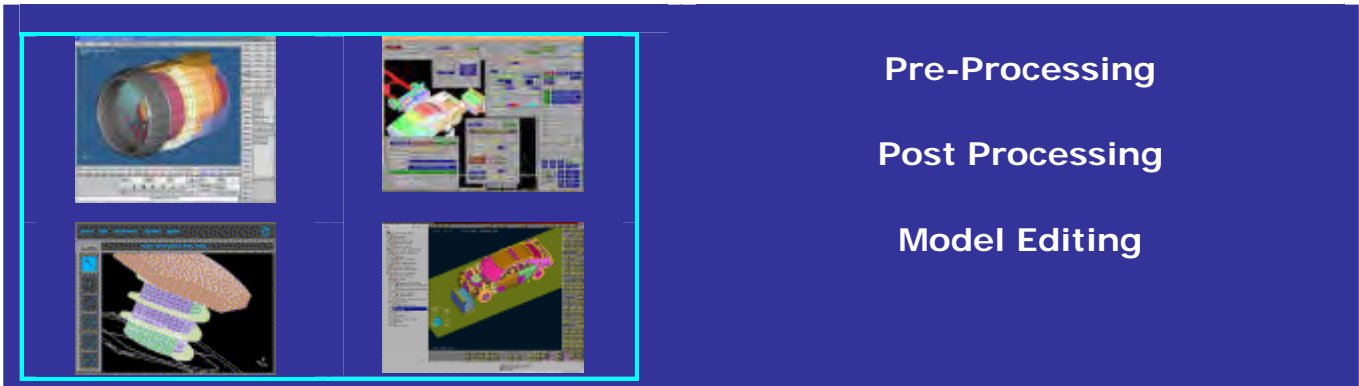
The Taj Vivanta
ITPB, Whitefield
Bangalore 560 066
India
Tel No.: 91-80-6693-3333

If you plan to stay over before or after the event, we are pleased to confirm that we have negotiated a special rate for attendees of the Oasys LS-DYNA Update meeting. Please contact us for assistance.

Contact Details

If you have any queries regarding this event you can contact:

Ms Rafia Sultana
Enhance Engineering Solutions(P)Ltd
Plot No. 39, Ananth Info Park, HiTec
City-Phase II
Madhapur, Hyderabad-500081,India
Tel: +91 (0) 40 44369797/8
Email: india.support@arup.com
Website:
<http://www.oasys-software.com/dyna>



Pre-Processing

Post Processing

Model Editing

A preprocessor is a program that processes its input data to produce output. This data is then used as input to another program.

BETA CAE Systems S.A.

<http://www.beta-cae.gr/>

Provides complete CAE pre- and post-processing solutions. ANSA, the world wide standard pre-processor and full product modeler for LS-DYNA, with integrated Data Management and Task Automation. μ ETA, with special features for the high performance an effortless 3D & 2D post-processing of LS-DYNA results.

Engineering Technology Associates, Inc.

<http://www.inventiumsuite.com>

PreSys is an advanced Pre/Post Processor. PreSys is a full-featured, core solution that can be used on its own or with a variety of available add-on applications. The system offers advanced automeshing tools to provide the highest quality mesh with little CAD data preparation. It also features a scripting interface and model explorer feature for in-depth data navigation.

Oasys, Ltd

<http://www.oasys-software.com/dyna/en/>

Oasys Primer is a model editor for preparation of LS-DYNA input decks. - Oasys D3Plot is a 3D visualization package for post-processing LS-DYNA analyses using OpenGL® (SGI) graphics.

JSOL Corporation

<http://www.jsol.co.jp/english/cae/>

JVISION is a general purpose pre-post processor for FEM software. Designed to prepare data for, as well as support, various types of analyses, and to facilitate the display of the subsequent results.

Livermore Software Technology Corporation

<http://www.lstc.com>

LS-PrePost is an advanced interactive program for preparing input data for LS-DYNA and processing the results from LS-DYNA analyses.

LS-DYNA Distributors



LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

Alpha Order by Country

Australia	Leading Eng. Analysis Providers - LEAP http://www.leapaust.com.au/ info@leapaust.com.au
Canada	Metal Forming Analysis Corp - MFAC http://www.mfac.com/ galb@mfac.com
China	OASYS Ltd. (software house of Arup) http://www.oasys-software.com/dyna/en stephen.zhao@arup.com
France	ALYOTECH TECH. http://www.alyotech.fr nima.edjtemai@alyotech.fr
France	ALLIANCE SVCE. PLUS - AS+ http://www.asplus.fr/ls-dyna v.lapoujade@asplus.fr
Germany	CADFEM http://www.cadfem.de/en lsdyna@cadfem.de
Germany	DYNAMore http://www.dynamore.de/ uli.franz@dynamore.de

LS-DYNA Distributors



LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

India	OASYS Ltd. (software house of Arup) http://www.oasys-software.com/dyna/en lavendra.singh@arup.com
India	EASi Engineering http://www.easi.com/ rvenkate@easi.com
India	CADFEM Eng. Svce India http://www.cadfem.in/ info@cadfem.in
Italy	EnginSoft SpA http://www.enginsoft.it/ info@enginsoft.it
Japan	JSOL Corporation http://www.jsol.co.jp/english/cae cae-info@sci.jsol.co.jp
Japan	ITOCHU Techno-Solutions Corp. http://www.engineering-eye.com/ ls-dyna@ctc-g.co.jp
Japan	FUJITSU http://jp.fujitsu.com/solutions/hpc/app/lldyna/

LS-DYNA Distributors



LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

Korea	Theme Engineering http://www.lsdyna.co.kr/ wschung@kornet.com
Korea	Korea Simulation Technologies http://www.kostech.co.kr young@kostech.co.kr
Netherlands	Infinite Simulation Systems, BV http://www.infinite.nl/ j.mathijssen@infinite.nl
Sweden	Engineering Research AB http://www.erab.se/ sales@erab.se
Taiwan	Flotrend Corporation http://www.flotrend.com.tw/ gary@flotrend.tw
Russia	State Unitary Enterprise –STRELA info@ls-dynarussia.com



LS-DYNA Distributors

LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

United Kingdom	OVE ARUP & PARTNERS http://www.oasys-software.com/dyna/en/ dyna.sales@arup.com
USA	Livermore Software Tech. Corp. - LSTC http://www.lstc.com/ sales@lstc.com
USA	Engineering Tech. Assc. Inc. – ETA http://www.eta.com/ sales@eta.com
USA	DYNAMAX http://www.dynamax-inc.com/ sales@dynamax-inc.com



Finite Element Analysis

North America

FEA Consulting/Consultants & Engineering Services

FEA Consultants use a wide range of software simulation programs. Their expertise using specific programs for their customers offers the ability for controlling the modeling and analysis of structures, systems, products and many other applications. Consultants and Engineering Services are used by government, homeland security, court trials, and a number of industries needing to have outside sources for expertise in FEA

<http://www.fea-consulting.com>

North America

Located: California'

Karagozian & Case - (K&C)

<http://www.kcse.com>

Shangrui Lan
(818) 303-1268

Located: Connecticut

CAE Associates

<http://www.caeai.com>

(203) 758-2914

Located: Oregon

Predictive Engineering

<http://predictiveengineering.com>

George Laird
(800) 345-4671

Located: California

Schwer Engineering

<http://schwer.net>

Len Schwer
(707) 837-0559

Located: Texas

**KBEC
Khan Bui**

(512) 363-2739

Located: Ohio

AEG Product Engineering Svce.

<http://engineering-group.com>
support@engineering-group.com



Software & Hardware Alliances

**Software Solutions
SMP/MPP Hardware & OS
MPP & Interconnect MPI**

ETA – DYNAFORM & VPG

<http://www.eta.com>

Includes a complete CAD interface capable of importing, modeling and analyzing, any die design. Available for PC, LINUX and UNIX, DYNAFORM couples affordable software with today's high-end, low-cost hardware for a complete and affordable metal forming solution.

ETA – VPG

<http://www.eta.com>

Streamlined CAE software package provides an event-based simulation solution of nonlinear, dynamic problems. eta/VPG's single software package overcomes the limitations of existing CAE analysis methods. It is designed to analyze the behavior of mechanical and structural systems as simple as linkages, and as complex as full vehicles.

OASYS software for LS-DYNA

<http://www.oasys-software.com/dyna/en/>

Oasys software is custom-written for 100% compatibility with LS-DYNA. Oasys PRIMER offers model creation, editing and error removal, together with many

specialist functions for rapid generation of error-free models. Oasys also offers post-processing software for in-depth analysis of results and automatic report generation.



Software & Hardware Alliances

Software Solutions
SMP/MPP Hardware & OS
MPP & Interconnect MPI

ESI Group Visual-CRASH For DYNA

<http://www.esi-group.com>

Visual-Crash for LS-DYNA helps engineers perform crash and safety simulations in the smoothest and fastest possible way by offering an intuitive windows-based graphical interface with customizable toolbars and complete session support. Being integrated in ESI

Group's Open VTOS, an open collaborative multi-disciplinary engineering framework, Visual-Crash for DYNA allows users to focus and rely on high quality digital models from start to finish. Leveraging this state of the art environment, Visual Viewer, visualization and plotting solution, helps analyze LS-DYNA results within a single user interface.

BETA CAE Systems S.A.– ANSA

<http://www.beta-cae.gr>

Is an advanced multidisciplinary CAE pre-processing tool that provides all the necessary functionality for full-model build up, from CAD data to ready-to-run solver input file, in a single integrated environment. ANSA is a full product modeler for LS-DYNA, with integrated Data Management and Process Automation. ANSA can also be directly coupled with LS-OPT or LSTC to provide an integrated solution in the field of optimization.

BETA CAE Systems S.A.– μETA

<http://www.beta-cae.gr>

Is a multi-purpose post-processor meeting diverging needs from various CAE disciplines. It owes its success to its impressive performance, innovative features and capabilities of interaction between animations, plots, videos, reports and other objects. It offers extensive support and handling of LS-DYNA 2D and 3D results, including those compressed with SCAI's FEMZIP software



SMP & MPP Hardware & OS Listing

Specifically for LS-DYNA

SMP & MPP Hardware an OS

FUJITSU

Prime Power

Sun OS 5.8

SGI

LINUX

WINDOWS

INTEL

IA 32

Linux, Windows

INTEL

IA64

Linux

INTEL

Xeon EMT64

Linux, Windows 64

HP

PA-8X00

HP-UX 11.11.
and above

HP

Opteron

Linux

HP

Alpha

True 64

HP

IA-64

HP-UX 11.22
and above



MPP And Interconnect MPI

Specifically for LS-DYNA

MPP and Interconnect MPI

Company	O/S	HPC Interconnect	MPI Software
FUJITSU			
Prime Power	SUN OS 5.8		
HP			
PA8000	HPUX		
IA64	HPUX		
INTEL			
IA32	Linux, Windows	InfiniBand (Voltaire), MyriCom	MPICH, HP MPI, OpenMPI
IA64	Linux		MPICH, HP MPI, OpenMPI
Xeon EMT 64	Linux	InfiniBand (Voltaire), MyriCom, PathScale InfiniPath	MPICH, HP MPI, OpenMPI, INTEL MPI

Continued on next Page



MPP And Interconnect MPI

Specifically for LS-DYNA

MPP and Interconnect MPI

SGI			
Altix 4700, 450	Linux	NUMALink 4	SGI MPT, OpenMPI, Intel MPI, MPICH, Platform MPI 7 (HP-MPI)
Altix UV	Linux	NUMALink 5	SGI MPT, OpenMPI, Intel MPI, MPICH, Platform MPI 5.6 (Scali MPI), 7 (HP-MPI)
Altix ICE	Linux	GigE QDR Mellanox Infiniband	SGI MPT, OpenMPI, Intel MPI, MPICH, Platform MPI 5.6 (Scali MPI), 7 (HP-MPI)
Altix XE	Linux & Windows	GigE QDR Mellanox Infiniband	SGI MPT, OpenMPI, Intel MPI, MPICH, Platform MPI 5.6 (Scali MPI), 7 (HP-MPI), MSMPI
CloudRack X2	Linux & Windows	GigE	SGI MPT, OpenMPI, Intel MPI, MPICH, Platform MPI 5.6 (Scali MPI), 7 (HP-MPI), MSMPI
Octane III	Linux & Windows	GigE QDR Mellanox Infiniband	SGI MPT, OpenMPI, Intel MPI, MPICH, Platform MPI 5.6 (Scali MPI), 7 (HP-MPI), MSMPI



Training Courses

April 2010

Alpha Order by
Country

Start dates only are shown

Germany

Dynamore

<http://www.dynamore.de/seminars>

April 13th
eta/DYNAFORM
April 13th
Identification LS-OPT
April 20th
Crash Analysis
April 29th
Introduction to LS-DYNA
March 30
Identification LS-OPT

Germany

CADFEM GmbH

(See next page)

India

CADFEM India

<http://www.cadferm.in/seminars/ls-dyna/introduction.html>

April 22nd
Introduction to LS-DYNA
May 25th
Contact Simulation
May 26th
Material Modeling

UK

Oasys and nance Engineering Solutions Pvt. Ltd.

[http://www.oasys-
software.com/dyna/en](http://www.oasys-software.com/dyna/en)

May 24th & 25th 2010

US

LSTC

<http://www.lstc.com>

April 8th (MI)
Implicit
April 22nd (MI)
ALE Advanced Option in



Training Courses

April 2010

CADFEM GmbH

Marktplatz 2 - 85567 Grafing b. München - Germany

Tel. +49 (0) 8092-7005-98; Fax: +49 (0) 8092- 7005-7; E-Mail seminar@cadfem.de

Beside the trainings on all aspects of short time dynamics we offer also various seminars on new methods available in LS-DYNA.

<http://www.cadfem.de/en/seminars/ls-dyna>

April 14-16
LS-DYNA Introduction
CADFEM Grafing

April 24
Examination and evaluation of simulation
in LS-DYNA
CADFEM Grafing

April 26-29
Optimization and robustness evaluation
with optiSLang and LS-DYNA
CADFEM Dortmund

April 9
Introduction in ALE- and FSI
methodology in LS-DYNA
CADFEM Grafing

April 15-16
ALE and FSI - Theory and Applications
CADFEM Leinfelden-Echterdingen

April 22-23
Heat Transfer and Thermal-Stress
Coupling with LS-DYNA
CADFEM Leinfelden-Echterdingen

11th International LS-DYNA Users Conference



LS-DYNA Conference

Sponsored Area
by
Livermore Software Technology
Corp.

Platinum Sponsor Microsoft® - Plenary Speaker & Banquet Sponsor

LS-DYNA® combined with Microsoft® Windows® HPC Server 2008 high-performance computing platform provides an accelerated solution for engineers, mathematicians, and designers in many industries – Article on page 10 of the FEA news

The conference will begin with three Plenary speakers:

Thomas J.R. Hughes,
University of Texas at Austin

David J. Benson,
University of California at San Diego

Thomas J. Lange,
Procter & Gamble, Ohio

Conference Attendees are cordially invited by LSTC and Microsoft, for the Conference Banquet and Entertainment on Monday evening - 7:00 p.m. - 9:00 p.m.

<http://www.microsoft.com/hpc/en/us/product-information.aspx>

11th International LS-DYNA Users Conference



LS-DYNA Conference

Sponsored Area
by
Livermore Software Technology
Corp.

Among the Sponsors & Booth Registrations (more to be listed April)

Microsoft®

ETA

Oasys Ltd.

ESI Group

Data Point Labs

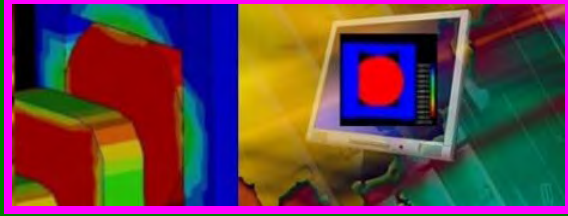
BETA CAE

Penguin
Computing

FTSS

FEA Information

TASS



11th Int'l LS-DYNA Users Conference
Training Courses
Wednesday & Thursday,
June 09-10, 2010

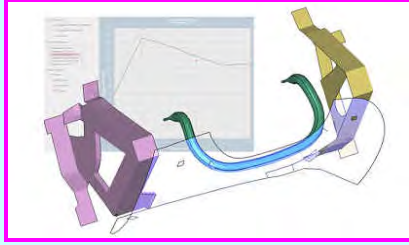
Using LS-DYNA for Heat Transfer with Hot Stamping Applications
Instructor: Dr. Arthur B. Shapiro

The course objective is to provide an understanding of computational finite element heat transfer. Presentations 1-6 focus on the various heat transfer modeling issues one must understand in using LS-DYNA. This is followed by presentations 7 and 8, which are an introduction to thermal-stress problems with a focus on sheet metal forming. Workshop problems are used to illustrate the points made in the lectures.

Presentations include:

- **Introduction** – Learn to create a KEYWORD input file to solve for the thermal expansion of an aluminum block. Learn LS-PrePost commands to display temperature and heat flux.
- **Mathematical Theory** – brief, but can't be avoided
- **Equation Solvers** - Learn the advantages and disadvantages between the Gauss direct solvers & conjugate gradient iterative solvers in LS-DYNA.
- **Time Step Control** – Learn how to select a time step size, use the variable time step option, and understand the difference between fully implicit and Crank Nicolson time integration methods.
- **Nonlinear Problems** – Learn the nonlinear heat transfer keyword parameters by solving a radiation problem and a solid-liquid phase change problem.
- **Boundary Conditions** – Learn how to define temperature, flux, convection, and radiation boundary conditions. Learn how to hand calculate a convection heat transfer coefficient.
- **Thermal Contact** – Learn thermal contact modeling issues by solving a sheet metal forming problem with thin and thick shells.
- **Thermal-stress coupling** – An introduction to coupled thermal stress modeling with a focus on sheet metal forming applications.
- **Thermal-fluids** – Learn 3 modeling techniques for pipe flow: (1) BULKFLOW, (2) pipe network flow, and (3) ALE.
- **Miscellaneous** – A quick overview of miscellaneous modeling topics (e.g., powders, welding, thermostats, MEMS, etc.).
- **Hot Forming Process** - fringes of temperature

For training inquiries contact Cathie – Cathie@lstc.com



**11th Int'l LS-DYNA Users Conference
Training Courses
Wednesday & Thursday,
June 09-10, 2010**

**Optimization Using LS-OPT® and LS-DYNA®
Instructor: Dr. Nielen Stander**

The course is to provide an understanding of simulation-based optimization and reliability using LS-DYNA. The graphical user interface is used to teach input preparation and post-processing. The newly released LS-OPT V4.1 is used, so this is an opportunity to become familiar with the new features.

Day I

Optimization Theory. Experimental Design, Metamodeling, Optimization.

Introduction to the Graphical User Interface. A demonstration of the GUI to set up a design optimization problem using LS-DYNA for simulation.

Crashworthiness optimization. Setting up and running an optimization problem with LS-DYNA.

Day II

System Identification. A problem to identify material parameters from experimental results. Confidence intervals.

Multi-disciplinary optimization.

Learn how to set up an optimization problem with more than one case or discipline. Combines crashworthiness with frequency criteria in a single design.

Multi-objective optimization.

Optimize a problem with more than one objective. Post-processing specific to MOO problems using scatter plots, Hyper Radial Visualization, Parallel Coordinates and Self-Organizing Maps. (Time allowing).

Reliability analysis. Use of Monte Carlo simulation to determine the reliability of a structural design. Theory and tutorial.

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Polymeric Material With LS-DYNA – Instructor: Paul A. DuBois

Day 1 – Wednesday

Foam materials:

general introduction

Elastic foams :

input data generation

Special aspects of foams :

damage and porosity

Overview

the German FAT research project

Day 2 – Thursday

Modeling

thermoplastics as visco-elastic materials

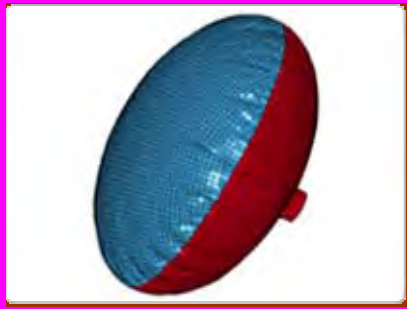
Modeling

thermoplastics as elasto-plastic materials

Elastomer and rubber modeling

LS-DYNA MAT_SAMP

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LS-PrePost 3.0 Instructor: Philip Ho

Overview

- GUI layout, keyword and mouse operations
- Ls-Prepost 2.4 to 3.0 transition

Geometry Engine

- Simple geometry creation
- Points, lines, surface, solids
- Geometry cleaning before meshing

Meshing

- Simple shape creation
- Automatic meshing from Iges/Step files
- 2D meshing
- Sweeping 2D cross section into 3D solid
- Generate solid element from shell element
- Generate shell element from solid faces

Mesh Checking and editing

- Mesh quality check
- Shell element normal check and reverse
- Mesh editing and cleanup

Mesh modification and creation by

- Translation
- Transformation
- Reflection
- Scaling
- Projection
- Offset

Keyword data

- Multiple input files
- Keyword data creation and editing
- Keyword file output

LS-DYNA data creation

- Coordination system
- Constrained data
- Initial data
- Rigid wall
- Sets data

Post-Processing

- Animation
- Fringing, fringe range setting
- Showing result
- History plotting
 - D3plot files
 - Ascii file
 - User files
 - Crossplot

Output

- Movie
- Image
- Deformed geometry

Misc.

- Cross-section cutting
- Color management
- Annotation
- Measurement
- Setting
- Command file and Macro
- Configuration file

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Occupant Analysis using LSTC Dummies and Tools
Course Outline is subject to minor changes next month

A) The Basic Model of the Occupant inside the Vehicle (Frontal)

- How to Position the H-III Dummy Model in a Vehicle Environment
- How to Route a Seatbelt over the Dummy and the intricacies of the Seatbelt Model. How to apply "contact" with the Dummy.
- The simple Vehicle Model for Frontal Occupant Analysis and its intricacies. How to apply Pitch, Drop and Yaw. How to apply "contact".
- How to apply pulse to the Dummy
- How to run the combined model

B) How to Post-Process

- How to see animations
- How to plot Injury Responses

C) How to Quickly Modify Existing Models

- How to reposition the Dummy for small movements in H-Point and Pelvic Angle, without rerouting the Seatbelts.

- How to modify an existing fully running model and change it into one that represents a completely different vehicle, in a different design location, thus reducing modeling time.

D) Discussion of Other Important Items

- The Steering Column Model
- The basic Airbag Model (using *Airbag_Hybrid)
- The basic Particle Method for Airbag Modeling (in brief)

E) Overview of the Current Rules and Regulations

- FMVSS (USA) and CMVSS (Canada)
- US NCAP and IIHS Offset Deformable Barrier
- European Regulatory and Euro-NCAP

F) Other Topics (if time permits)

- Overview of other LSTC Anthropomorphic Models
- Overview of LSTC Barrier Models



11th Int'l LS-DYNA Users Conference

Presentation Categories And Paper Titles

Additional information on authors and sessions will be published in a later publication

Category	Paper Title
Aerospace / Crash	EMAS Core Material Modeling with LS-DYNA
Aerospace / Crash	LS-DYNA Analysis of a Full-Scale Helicopter Crash Test
Aerospace / Crashworthiness	Developing an Airbag System Using LSDYNA Modeling and Simulation
Aerospace / Fracture / EFG	Engine Impeller Sub-Fragmentation Simulation Using EFG Method
Aerospace / Impact	Development of hail material model for high speed impacts on aircraft engine
Aerospace / SPH	Comparison of FEM and SPH for Modeling a Crushable Foam Aircraft Arrestor Bed
Biomechanics	Investigation of LS-DYNA Modeling for Active Muscle Tissue
Blast	A study of Mapping technique for Air Blast modeling
Blast	Finite Element Simulation of Blast Mitigation Seat under High Impulse Loading Conditions
Blast / Bridges	Numerical Prediction of the Dynamic Response of Prestressed Concrete Box Girder Bridges under Blast Loads
Blast / Explosive	High Fidelity In-Bore Pressure Modeling
Blast / Head Injury	Applying the Dynamic Relaxation Step to Determine Influence on Global Model Response from Shock Tube Loading for a Mounted Hybrid III Head Neck Assembly
Blast / Vehicle Safety	Vehicle and Occupant Safety Protection CAE Simulation
Crash Safety / Dummy Models	An Integrated Process for Occupant Safety Simulations With LS-DYNA & Madymo Coupling
Crash Safety / Dummy Models	Status Update on Dummy Model Development
Crash Safety / Dummy models	Investigations of Generalized Joint Stiffness model in LSTC Hybrid III Rigid-FE Dummies
Crashworthiness / Barriers	Modeling Wire Rope used in Cable Barrier Systems
Crashworthiness / Barriers	Finite Element Modeling and Validation of Guardrail Steel Post Deflecting in Soil at Varying Embedment Depths

Crashworthiness / EFG	Applications of the meshfree method with the GMF approximation in transportation safety engineering
Crashworthiness / Impact	Improvement Of The Energy Absorption Capacity Of An Intercity Coach For Frontal Crash Accidents
Crashworthiness / Material Modeling	A Comparison of Recent Damage and Failure Models for Steel Materials in Crashworthiness Applications in LS-DYNA
Crashworthiness / Material Modeling	Crashworthiness of composite structures with various fiber architectures
Crashworthiness / Modal Analysis	Advanced Mode Analysis for Crash Simulation Results
Crashworthiness / Optimization	Safety Assessment and Multi-Objective Optimization of a Paratransit Bus Structure
Crashworthiness / Structure	Polypropylene Bracket Countermeasure for Door Trim Side Impact
Crashworthiness / Structure	Simulation of Crash Resistance, an Investigation into Vehicle Frame Stiffness in Frontal Impact Test Using LS-DYNA
Crashworthiness / Structure	Bolted joint representation in LSDYNA3D to model bolt pre-stress and failure characteristics of bolted joints in crash simulations.
Crashworthiness / Structure	Crashworthiness Analysis of Finite Element Truck Chassis Model Using LS-DYNA
Dummy Models	A New Development in Pedestrian Safety: the FLEX-PLI GTR LS-DYNA Model
Element Technology	An assessment of the new LS-DYNA multi-layered solid element: basics, patch simulation and its potential for thick composite structural analysis
Fluid Solver / CESE	How to Use the New CESE Compressible Fluid Solver in LS-DYNA
Fluid Solver / Explosion	Module development of multiphase and chemically reacting flow in compressible flow solver
Fracture / Damage	Simulation of crack propagation using damage-driven fission adaptivity coupled with node splitting and element erosion
Fracture / EFG / XFEM	Modeling of Dynamic Fracture in Solids and Structures by EFG and XFEM Methods
Frequency Response/Random Vibration, Steady State Response	Mode-based frequency response function and steady state dynamics in LS-DYNA
FSI	Development of Parachute Simulation Techniques in LS-DYNA
FSI	Fluid Structure Interactions (FSI) Applications on Disposable Diapers
FSI	Drop test into water and wave impact simulations of a novel 7-meter plastic boat with LS-DYNA®
FSI	New ALE Incompressible Material Using Implicit Pressure
FSI / ALE / SPH	Stone skipping simulation by ALE and SPH

FSI / Incompressible CFD	Discussion on the Advances and Release Features for the Incompressible CFD Solver in LS-DYNA
FSI/SPH	Structure-Fluid Interaction analysis of an existing water tank
Hardware / GPU	Performance Benefits of NVIDIA GPUs for LS-DYNA
Hardware / MPP Hybrid	New Features in LS-DYNA HYBRID Version
Hardware / MPP Hybrid	LS-DYNA® on Advanced SGI Architecture
Hydroforming	A Finite Element Comparison Between Single and Bi-layered Tube Hydroforming Processes
Impact / Ballistics	Using LS-DYNA® to Computationally Assess the V0-V100 Impact Response of Flexible Fabrics Through Probabilistic Methods
Impact / Ballistics	Simulation of Granular Ceramic Armor Under Impact from Bullets
Impact / Ballistics	Investigation of the shear thickening fluid dynamic properties and its influence on the impact resistance of multilayered fabric composite barrier.
Impact / Blast	High-velocity Fragment Impact Simulation on a Solid Steel Cable Using the Modified Johnson-Cook Model
Impact/Damage/Crash	Modeling Low Velocity Impact on Thick-Section Composite Cylinder
Implicit Solver Technology	The potential impact of GPUs on LS-DYNA Implicit Mechanics
Material Modeling	Simulation of Triaxial Braided Composite Tube Crush With a Couple – Plasticity Model
Material Modeling	Investigation of *MAT_58 for Modeling Braided Composites
Material Modeling	Detailed Material Modeling of Foams in LS-DYNA
Material Modeling	Implementation of the Tanimura-Mimura's strain rate dependence constitutive model into LS-DYNA using user defined material model
Material Modeling	On the Prony Relaxation Function
Material Modeling / Automotive	A New Strain Rate Dependent Spotweld Failure Model for Automotive Crash Applications
Metal Forming	Process Modeling of Freeform Incremental Forming Using LS-DYNA
Metal Forming	Numerical Simulation and Experimental Study of Electromagnetic Forming
Metal Forming	Prediction Springback of CNC Tube Bending Process Based on Forming Parameters
Metal Forming	Update on the Electromagnetism Module in LS-DYNA
Metal Forming	Practical application of springback calculation and compensation
Metal Forming / EFG	3D Adaptive EFG Method for Forging and Extrusion Analysis with Thermal Coupling

Metal Forming / EFG	Meshfree Interactive Adaptivity and Its Application
Metal Stamping	A simple, but efficient and robust way to do binder wrap simulation with LS-DYNA Implicit Solver
Metal Stamping	Recent Development in JSTAMP/NV for the Best Stamping Simulation Environment
Metal Stamping	Advancements in LS-DYNA® for Metal Forming Simulation (Part I)
Metal Stamping	Advancements in LS-DYNA® for Metal Forming Simulation (Part II)
Occupant Safety	Overview of LSTC's crash test dummy model development effort
Occupant Safety	WorldSID vs. ES-2. A Comparison Based on Simulations
Occupant Safety	Side Impact Occupant Modeling Practices in Comparison to Test Results
Occupant Safety / Dummy	Development and Validation of a FE Model of Thor Head-Neck Complex
Optimization	Reliability-based Multi-Objective Optimization Using Sequential Strategy on LS-OPT®
Optimization	Capabilities of Result Visualization in LS-OPT V4.1 - Demonstrated by Means of Industrial Problems
Optimization	Application of Topology Optimization for Crash with LS-OPT/Topology
Optimization	Multi-Disciplinary Optimization of a Sedan using Size and Shape Parameterization
Optimization	Variable Screening Using Global Sensitivity Analysis
Optimization	LS-OPT/Topology Version 1
Optimization / Crashworthiness	Optimization of a truck cab family
Optimization / Crashworthiness	Soft Zone Material Optimization of an Automotive B-Pillar for IIHS Side Impact using LS-DYNA with HEEDS
Optimization / LS-OPT	An Overview of LS-OPT Version 4.1
Optimization / Occupant Safety	Optimization Techniques in Conjunction with Complex ATD FE Models
Optimization/Crashworthiness	Variable Reduction in Automotive Crashworthiness Multi-Objective Optimization
Optimization/Crashworthiness	Improvement of Energy Absorption for the Side Member Using Topography Optimization
PRE/POST	LS-DYNA® Durability Loadcases: An Automated Template Driven Process Using the ANSA Task Manager
PRE/POST	LS-DYNA "Model Compare" in Visual-Environment
Simulation / Material Modeling / Concrete	Improvement to Release III of the K&C Concrete Model
Simulation	FEM Modeling of Innovative Helmet Liners

Simulation	Predicting the Dynamic Crushing Response of a Composite Honeycomb Energy Absorber using a Solid-Element-Based Model in LS-DYNA
Simulation	Response of the Enhanced Polar Outflow Probe (e-POP) Instrument under shock loading
Simulation	Usage of LS-DYNA® in the development of professional drill hammers
Simulation	A Contribution to new ALE 2D method validation
Simulation	Simulation of a thin walled aluminum tube subjected to base acceleration using LS-DYNA's vibroacoustic solver
Simulation	Mathematical modeling of asteroid falling into the ocean
Simulation	LS-DYNA and JMAG coupling simulation for change of SPM motor magnetic properties due to press-fitting
Simulation	Study of Thin-walled Box Beam's Crushing Behaviors Using LS-DYNA
Simulation / Biomedical	Facial Modelling: Imaging, Muscle Modelling and Surgery
Simulation / Aerospace / Thermal	Heat Transfer Simulation to Determine the Impact of Al and Al-5Mg Arc Sprayed Coatings onto 7075 T6 Al Alloy Fatigue Performance
Simulation / Automotive	Experimental Finite Elements in LS-DYNA®
Simulation / Civil Engineering	Analysis and Design of Large-Scale Civil Works Structures Using LS-DYNA®
Simulation / Geomaterial	A Brief Look at *MAT_NONLOCAL: A Possible Cure for Erosion Illness?
Simulation / Roadway	Performance of Thin Concrete Deck Due to Traffic Impact