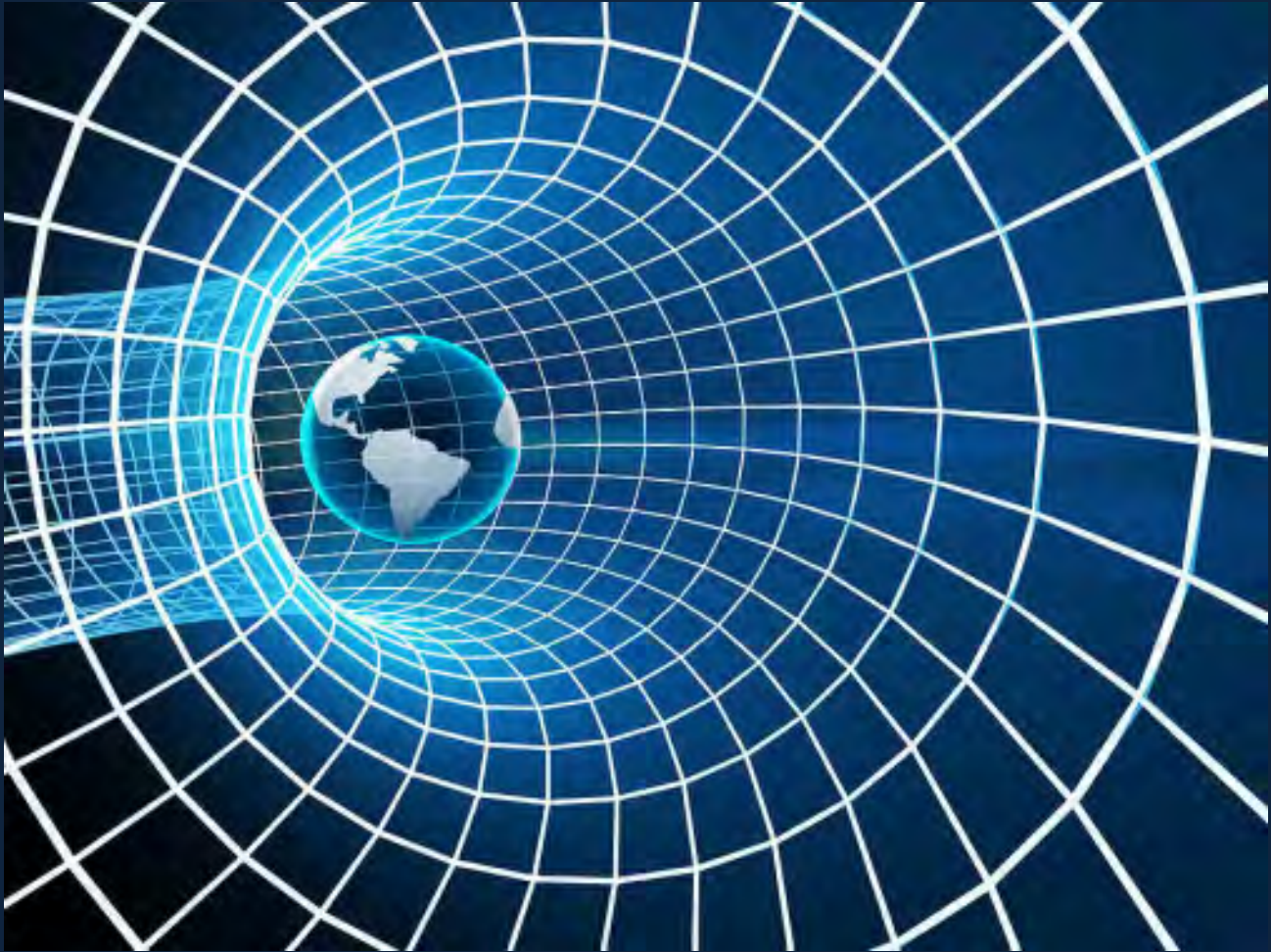


FEA Information Engineering Solutions

Volume 1, Issue 4, May 2012



Inside This Issue:

FEA Information Participants sponsoring/exhibiting
at the 12th International LS-DYNA Users Conference

FEA Information Inc. is a publishing company founded April 2000, incorporated in the State of California July 2000, and first published October 2000. The initial publication, FEA Information News continues today as FEA Information Engineering Solutions. The publication's aim and scope is to continue publishing technical solutions and information, for the engineering community.

FEA Information Inc. Publishes:

- FEA Information Engineering Solutions
- FEA Information Engineering Journal
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A monthly publication in pdf format sent via e-mail, additionally archived on the website FEA Publications. www.feapublications.com

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The first edition was published February 2012. It is published in Simplified and Traditional Chinese in pdf format. Published : February, April, June, August, October, December. The China Solutions is archived on the website FEA Publications. www.feapublications.com
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FEA Information Engineering Journal: ISSN #2167-1273, first published February, 2012

Available on www.feaij.com

ISSN 2167-1273 Volume 1 Issue 3 April 2012 <p style="text-align: center;">FEA Information Engineering Journal</p>	ISSN 2167-1273 Volume 1 Issue 4 May 2012 <p style="text-align: center;">FEA Information Engineering Journal</p>
	
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For participation subscription including full page ads, articles, static listing, contact Anthony Giaccana, agiac99@aol.com

New Platinum Participant Sponsor:

Kaizenat Technologies has formally commenced its operations, by opening offices in Bangalore and Chennai, on May 18th, 2012 as an authorized distributor of LSTC's suite of software products.

FEA Information is pleased to showcase our participants that are sponsoring – exhibiting and presenting papers at the 12th International LS-DYNA Users Conference

Please visit their booths. Their participation in FEA Information Engineering Solutions assists the continuation of our magazine, and the monthly FEA Information Engineering Journal being open source without fees.

Print correction: Cadfem GmbH is the only participant in Germany to distribute ANSYS.

We welcome unsolicited topics, ideas, and articles. Publishing is at the sole discretion of FEA Information Inc.

12th International LS-DYNA® Users Conference

Author: A. Giaccana, FEA Information Inc.

FEA Information Inc. and many of our Sponsors will be showcasing products, services and presenting papers at the 12th International LS-DYNA® Users Conference, on June 3 - 5, 2012 Hyatt Regency Dearborn Dearborn, Michigan USA

This first section will let you know about the conference, and booth locations of our participants.

The conference will feature:

Plenary, Keynote Addresses, Final Session Presentation by:

Dr. Thomas J.R. Hughes, *Professor of Aerospace Engineering and Engineering Mechanics*

Dr. David J. Benson, *Professor of Structural Engineering*

Mr. Kenji Takada, *Honda R&D Co., Ltd.*

Mr. John Combest, *Vice Chairman, GHBM Steering Committee, Nissan*

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12th International LS-DYNA® Users Conference

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FEA Information Inc.	401	www.feainformation.com
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JSOL Corporation	107	www.jri-sol.com
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Huang, Y., Arup

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Automated Post-Processing & Report-Generation for Standard Crash & Safety Tests Simulation

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Dummy Model Validation and its Assessment

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Hilding, D., DYNAmore Nordic AB

Simulation of Loads from Drifting Ice Sheets on Offshore Structures

Schill, M., DYNAmore Nordic AB

Finite Element Simulations of Blasting and Fragmentation with Precise Initiation

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Palmer, T., Engineering Technology Associates, Inc.

Rollover Simulations for Vehicles using Deformable Road Surfaces

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Development of a New Software Architecture for LS-DYNA® Applications

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He, J., Engineering Technology Associates, Inc.

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ALE Adaptive Mesh Refinement in LS-DYNA[®]

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LS-DYNA[®] 980: Recent Developments, Application Areas and Validation Process of the Incompressible Fluid Solver (ICFD) in LS-DYNA, Part 2

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Heat Transfer with Explicit SPH Method in LS-DYNA[®]

Zhang, L., Livermore Software Technology Corporation

EZ Setup within LS-PrePost[®] v4.0 for Metal Forming

Zhang, L., Livermore Software Technology Corporation

Advance in Sheet Metal Forming - Failure Criteria, Friction, Scrap Trimming and Adaptive Meshing

Zhu, X., Livermore Software Technology Corporation

Advance in Sheet Metal Forming - One-step Solution, Multi-Beads, Gravity Prebending, Auto Nets, and Local Compensation

Shanghai Hengstar Technology Co., Ltd

Lu, H.S., Shanghai Hengstar Technology Co., Ltd

Simulation of Reinforced Concrete Structure under Impact Loading using Meshfree Cohesive Failure Approach

Set Up:

If separated parts have to be connected within a LS-DYNA simulation, two different methods can be distinguished:

Connecting by mesh or using so-called tied contact types. Whereas the first one may require a huge effort, if the meshes do not fit to each other, the second method can be defined easily.

The tied interface contact definitions in LS-DYNA use two significantly different algorithms to connect parts together:

- a) The constraint method couples a node precisely to its initial position on the master segment,
whereby the slave nodes are moved during initialization to the master segment, i. e.,

the initial geometry is slightly altered without invoking any stresses.

This method does not allow any relative movement between slave node and master segment.

The disadvantage is that multiple constraints of one node are not possible.

- b) The penalty formulation implies strong forces to keep a node at its initial position.

This allows multiple contact formulations for a node. As disadvantage the node position might vary

slightly, which can be observed as high frequency oscillations with a very small amplitude.

The following small example explains the two schemes, whereby two shell parts are joined together.

Example:

You may download the file tied_contacts.k

(http://www.dynasupport.com/links/fea-information-examples/tied_contacts.k)

to run the example.

Questions:

1.) How can be checked that the two parts are tied together?

2.) Why do the parts separate?

Modify the contact definition such that the two parts are tied together.

3.) Apply the predefined boundary condition on node set one and run the simulation.

Why do the parts separate?

4.) Apply a penalty based tied contact to the problem.

Why does this method work?

5.) Scale the contact force by a factor of 0.001 (SFS=SFM=0.001).

What can be recognized?

6.) Switch back to the tied contact formulation based on a kinematic constraint method and apply the boundary condition to node set two.

What is the difference?

Solution/Answers are on the next page

Solution/Answers:

1.) - Warning messages in d3hsp and message file.

- Constrained tied contact formulation is used, i. e., if parts are tied, nodes of part two should be moved on midface of part one during initialization. Take a look on the initial geometry, e. g., with LS-PREPOST.

2.) Tying will only work, if the two surfaces are close to each other.

For shell elements, the distance must be lower than $\delta = \max [0.6 * (\text{thick}_1 + \text{thick}_2) , 0.05 * \min(\text{master_segment_diagonals})]$

In this example, the parts are too far away.

Solution: Define an artificial contact thickness using SST and MST
(CARD 3, contact definition) with negative values
(SST=MST=-2.0).

3.) Two kinematic constraints are defined for the slave nodes (double constraint problem), the kinematic constraints of the tied contact are released.

4.) The slave nodes are tied using contact forces, i. e., no double constraint problem.

5.) In this case, the tying forces are much too low so that the two parts separate more and more during simulation. This means, the tying forces can be scaled in the same way as the normal contact forces.

6.) The slave nodes are exactly fixed on the master segments. There is no relative motion between slave nodes and master segments, because the slave nodes are tied via kinematic constraints and not by using tying forces.

Kaizenat Technologies launched in Bangalore & Chennai with LS-DYNA® User Conference

Bangalore, India, 18th May 2012: We are pleased to inform you that Kaizenat Technologies has formally commenced its operations, by opening offices in Bangalore and Chennai on 18th May 2012, as an authorized distributor of LSTC's suite of software products.

This milestone has been accentuated with the successful launch of 'LS-DYNA Users Conference' in Bangalore addressed by Mr.Suri Bala, Senior Scientist, LSTC, USA. The conference was attended by about 100 users.

Kaizenat Technologies Pvt. Ltd (KTPL) is comprised of senior industry experts, with decades of product support & project delivery background.

The company is positioned to build on the strong momentum we have in sales, support and training of LSTC products. Additionally, we are ready to take advantage of new opportunities. KTPL's roadmap addresses the need for training and information sharing sessions across the country.

Kaizenat 1st LS-DYNA® India Users Conference

Suri Bala, LSTC & Developer of D3View

During the User Conference, Mr.Suri Bala, presented the new developments and highlights of LS-DYNA, LS-OPT and D3View. Mr. Ramesh Venkatesan elaborated on LS-Prepost features. The conference was well received with active participation from the audience and an overwhelming response. KTPL was excited to receive such extra ordinary support given by the Indian LS-DYNA user community.

Building upon the success of the conference and positive feedback, KTPL plans to arrange one more conference. We will propose our next event with enough preparation time, so that a greater number of users can attend.



Kaizenat 1st LS-DYNA® India Users Conference

KTPL proposes to open the next office in Pune and continue to work aggressively to capitalize the extraordinary support & co-operation of CAE professionals in the country. One of our goals is to provide customers with more intuitive and personalized value added services. KTPL's Technical support experts have experience of supporting nearly 150 LS-DYNA customers (65% automotive, 20% academic, 10% aero defence, 5% FMCG & others).

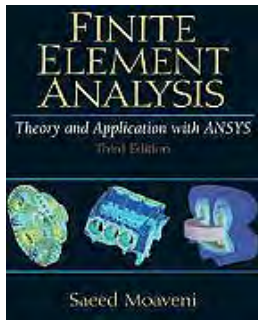
For Information on Sales, Support, Training, and all information on D3View and LSTC's products LS-DYNA, LS-OPT, LS-PrePost, LSTC Dummy and Barrier Models.

Contact:

support@kaizenat.com

<http://kaizenat.com/>

Reference Library



[Finite Element Analysis
Theory and Application
with ANSYS \(3rd Edition\)](#)

Saeed Moaveni

Recommended Reading



[Practical Stress
Analysis with Finite
Element](#)

Bryan J Mac Donald

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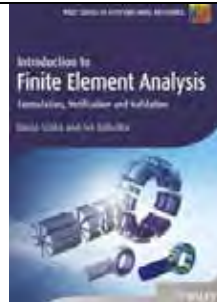
[A First Course in
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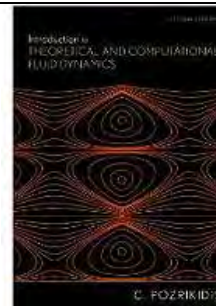
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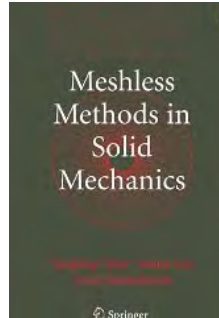
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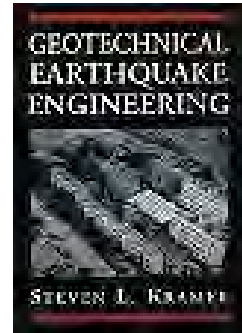
[Viskoplastische Stoffgesetze für Thermoplaste in LS-DYNA: Theorie und Aspekte der Programmierung](#)
Matthias Vogler

Recommended Reading



[Meshless Methods in Solid Mechanics](#)
Youping Chen

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[Geotechnical Earthquake Engineering](#)
Steven Lawrence Kramer

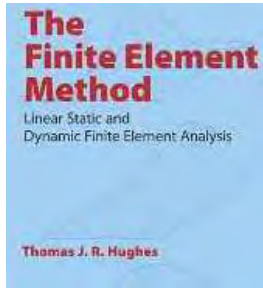


[Biomechanical Systems Technology: Computational Methods](#)
Cornelius T. Leondes



[Numerical response of steel reinforced concrete slab subjected to blast and pressure loadings in LS-DYNA.](#)
Vivek Reddy

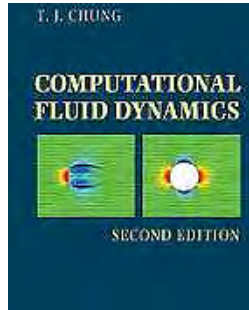
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Thomas J. R. Hughes

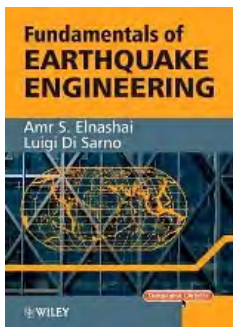
Recommended Reading



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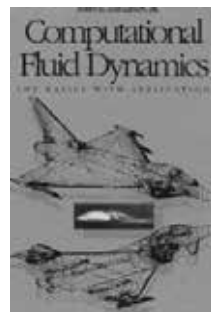
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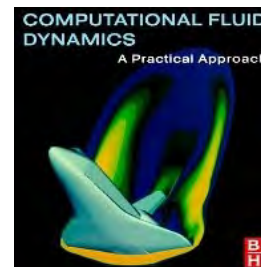
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Is a multi-purpose post-processor meeting diverging needs from various CAE disciplines. It owes its success to its impressive performance, innovative features and capabilities of interaction between animations, plots, videos, reports and other objects.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

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The Cray XK6

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The uRiKA graph appliance complements an existing data warehouse or Hadoop cluster.

Cray Sonexion 1300™ Storage System

The Cray Sonexion 1300 system is an integrated, high performance storage system that features next-generation modular technology to maximize the performance and capacity scaling capabilities of the Lustre file system.

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The company meets the material property needs of CAE/FEA analysts, with a specialized product line, TestPaks®, which allow CAE analysts to easily order material testing for the calibration of over 100 different material models.

DatapointLabs maintains a world-class testing facility with expertise in physical properties of plastics, rubber, food, ceramics, and metals.

Core competencies include mechanical, thermal and flow properties of materials with a focus on precision properties for use in product development and R&D.

Engineering Design Data including material model calibrations for CAE Research Support Services, your personal expert testing laboratory Lab Facilities gives you a glimpse of our extensive test facilities Test Catalog gets you instant quotes for over 200 physical properties.

ETA – Engineering Technology Associateswww.eta.com**Invention Suite™**

Invention Suite™ is an enterprise-level CAE software solution, enabling concept to product. Invention's first set of tools will be released soon, in the form of an advanced Pre & Post processor, called PreSys.

Invention's unified and streamlined product architecture will provide users access to all of the suite's software tools. By design, its products will offer a high performance modeling and post-processing system, while providing a robust path for the integration of new tools and third party applications.

PreSys

Invention's core FE modeling toolset. It is the successor to ETA's VPG/PrePost and FEMB products. PreSys offers an easy to use interface,

with drop-down menus and toolbars, increased graphics speed and detailed graphics capabilities. These types of capabilities are combined with powerful, robust and accurate modeling functions.

VPG

Advanced systems analysis package. VPG delivers a unique set of tools which allow engineers to create and visualize, through its modules--structure, safety, drop test, and blast analyses.

DYNAFORM

Complete Die System Simulation Solution. The most accurate die analysis solution available today. Its formability simulation creates a "virtual tryout", predicting forming problems such as cracking, wrinkling, thinning and spring-back before any physical tooling is produced

ESI Groupwww.esi-group.com**Visual-Crash**

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.

vibro-acoustic software

With ESI's vibro-acoustic software you no longer have to account for noise and vibration right at the design stage - no more costly delays or panic driven test-

based solutions. Our vibro-acoustic software has everything you need to diagnose potential noise and vibration problems up front in your development process. Manage risk by identifying possible problem areas that may need more detailed modeling or test based development, while you still have time to make an impact on the product!

VA One

VA One is a complete solution for simulating the response of vibro-acoustic systems across the full frequency range. VA One seamlessly combines Finite Elements (FE), Boundary Elements (BEM) and Statistical Energy Analysis (SEA) in ONE model. It is the only simulation code on the market today that contains the complete spectrum of vibro-acoustic analysis methods within ONE common environment.

GNS - Gesellschaft für Numerische Simulation mbHwww.gns-mbh.com**Animator4**

A general finite element post-processor and holds a leading position in its field. Animator4 is used worldwide by almost all automotive companies, a great number of aerospace companies, and within the chemical industry.

Generator2.

A specialized pre-processor for crashworthiness applications and has become very successful in the field of passenger safety and pedestrian protection. It is mainly used as a positioning tool for finite element component models by a great number of automobile companies throughout the world.

Indeed

An easy-to-use, highly accurate virtual manufacturing software that specializes in the simulation of sheet metal forming processes. Indeed is part of the GNS software suite and works concurrently with all other GNS software products.

OpenForm

A pre- and post-processor independently of a particular finite element forming simulation package. The software is extremely easy to handle and can be used as was designed to enable those who are not finite element experts to carry out multi-stage forming simulations with even complex multi purpose finite element codes.

Compute on demand®/ Gridcore AB Sweden**www.gompute.com****www.gridcore.se**

Compute is owned, developed and operated by Gridcore AB in Sweden. Founded in 2002, Gridcore is active in three areas: Systems Integration, Research & Development and HPC as a service.

Gridcore has wide experience of different industries and applications, developed a stable product portfolio to simplify an engineer/scientist's use of computers, and has established a large network of partners and collaborations, where we together solve the most demanding computing tasks for our customers. Gridcore has offices in Gothenburg

(Sweden), Stuttgart (Germany), Durham NC (USA) and sales operations in The Netherlands and Norway.

The Gridcore developed E-Gompute software for internal HPC resources gives end users (the engineers) an easy-to-use and complete environment when using HPC resources in their daily work, and enables collaboration, advanced application integrations, remote pre/post, accounting/billing of multiple teams, license tracking, and more, accelerating our customers usage of virtual prototyping

Solutions

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JSOL Corporation

www.jsol.co.jp/english/cae/

HYCRASH

Easy-to-use one step solver, for Stamping-Crash Coupled Analysis. HYCRASH only requires the panels' geometry to calculate manufacturing process effect, geometry of die are not necessary. Additionally, as this is target to usage of crash/strength analysis, even forming analysis data is not needed. If only crash/strength analysis data exists and panel ids is defined. HYCRASH extract panels to calculate it's strain, thickness, and map them to the original data.

JSTAMP/NV

As an integrated press forming simulation system for virtual tool shop

the JSTAMP/NV meets the various industrial needs from the areas of automobile, electronics, iron and steel, etc. The JSTAMP/NV gives satisfaction to engineers, reliability to products, and robustness to tool shop via the advanced technology of the JSOL Corporation.

JMAG

JMAG uses the latest techniques to accurately model complex geometries, material properties, and thermal and structural phenomena associated with electromagnetic fields. With its excellent analysis capabilities, JMAG assists your manufacturing process

Livermore Software Technology Corp.www.lstc.com**LS-DYNA**

A general-purpose finite element program capable of simulating complex real world problems. It is used by the automobile, aerospace, construction, military, manufacturing, and bioengineering industries. LS-DYNA is optimized for shared and distributed memory Unix, Linux, and Windows based, platforms, and it is fully QA'd by LSTC. The code's origins lie in highly nonlinear, transient dynamic finite element analysis using explicit time integration.

LS-PrePost

An advanced pre and post-processor that is delivered free with LS-DYNA. The user interface is designed to be both efficient and intuitive. LS-PrePost runs on Windows, Linux, and Macs utilizing OpenGL graphics to achieve fast rendering and XY plotting.

LS-OPT

LS-OPT is a standalone Design Optimization and Probabilistic Analysis package with an interface to LS-DYNA. The graphical preprocessor LS-OPTui facilitates definition of

the design input and the creation of a command file while the postprocessor provides output such as approximation accuracy, optimization convergence, tradeoff curves, anthill plots and the relative importance of design variables.

LS-TaSC

A Topology and Shape Computation tool. Developed for engineering analysts who need to optimize structures, LS-TaSC works with both the implicit and explicit solvers of LS-DYNA. LS-TaSC handles topology optimization of large non-linear problems, involving dynamic loads and contact conditions.

LSTC Dummy Models

Anthropomorphic Test Devices (ATDs), as known as "crash test dummies", are life-size mannequins equipped with sensors that measure forces, moments, displacements, and accelerations.

LSTC Barrier Models

LSTC offers several Offset Deformable Barrier (ODB) and Movable Deformable Barrier (MDB) model

Oasys, Ltd

www.oasys-software.com/dyna

Oasys LS-DYNA® Environment

The Oasys Suite of software, exclusively written for LS-DYNA®, is at the leading edge of the market and is used worldwide by many of the largest LS-DYNA® customers.

Oasys PRIMER is a model preparation tool that is fully compatible with the latest version of LS-DYNA®, eliminating the risk of data loss or corruption when a file is manipulated, no matter what operations are performed on it:

Key benefits:

- Maintains data integrity
- Finds and fixes model errors (currently over 5000 checks)
- Specialist tools for dummy positioning, seatbelt fitting, mechanisms, interior head impact etc.
- Connection manager for spotwelds, bolts, adhesive etc.
- Intelligent editing, deletion and merging of data
- Customisable with macros and JavaScript.

Oasys D3PLOT is a powerful 3D visualization package for post-processing LS-DYNA® analyses

Key benefits:

- Fast, high quality graphics
- Easy, in-depth access to all LS-DYNA® results.
- User defined data components
- Customisable with JavaScript.

Oasys T/HIS is an X-Y graph plotting package for LS-DYNA®

Key benefits:

1. Automatically reads all LS-DYNA® results.
2. Wide range of functions and injury criteria.
3. Easy handling of data from multiple models
4. Scriptable for automatic post-processing

Oasys REPORTER is an automatic report generation tool, for use with LS-DYNA®, which allows fast automatic report creation for analyses.

Solutions

Participant

Solutions

Shanghai Hengstar

www.hengstar.com

Center of Excellence

Hengstar Technology is the first LS-DYNA training center of excellence in China. As part of its expanding commitment to helping CAE Engineers, Hengstar Technology will continue to organize high level training courses and seminars in 2012.

The lectures/training are taught by senior engineers and experts mainly from LSTC, Carhs, OEMs, and other consulting groups.

On Site Training

Hengstar also provides customer customized training programs on-site at

the company facility. Training is tailored for company needs using LS-DYNA or the additional software products by LSTC.

Distribution & Support

Hengstar Distributes and supports LS-DYNA, LS-OPT, LS-PrePost, LS-TaSC. Hongsheng Lu, previously was directly employed by LSTC before opening his distributorship in China for LSTC software. He travels to LSTC often to keep current on the latest software features and support to continue to grow Hengstar as a CAE consulting group.

Distribution & Consulting**North America****Distribution & Consulting****Canada****Metal Forming Analysis Corp MFAC**galb@mfac.comwww.mfac.com

LS-DYNA

LS-OPT

LS-PrePost

LS-TaSC

LSTC Dummy Models

LSTC Barrier Models

eta/VPG

eta/DYNAFORM

INVENTIUM/PreSys

United States**CAE Associates Inc.**info@caeai.comwww.caeai.com

ANSYS Products

CivilFem

Consulting ANSYS

Consulting LS-DYNA

United States**DYNAMAX**sales@dynamax-inc.comwww.dynamax-inc.com

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LSTC Barrier Models

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QuikCAST

SYSWELD

PAM-RTM

PAM-CEM

VA One

CFD-ACE+

ProCAST

Visual-Process

VisualDSS

Weld Planner

Visual-Environment

IC.IDO

United States**Engineering Technology Associates – ETA**sales@eta.comwww.eta.com

INVENTIUM/PreSy

NISA

VPG

LS-DYNA

LS-OPT

DYNAform

United States**Gompute**info@gompute.comwww.gompute.com

LS-DYNA Cloud Service

Additional software

Additional Services

Distribution & Consulting**North America****Distribution & Consulting****United States****Livermore Software Technology Corp**sales@lstc.comLSTC www.lstc.com

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TOYOTA THUMS

United States**Predictive Engineering**george.laird@predictiveengineering.comwww.predictiveengineering.com

FEMAP

NX Nastran

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LSTC Barrier Models

Distribution & Consulting**Europe****Distribution & Consulting****France****DynAS+**v.lapoujade@dynasplus.comwww.dynasplus.com

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LS-TaSC

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France**ALYOTECH**nima.edjtemai@alyotech.frwww.alyotech.fr

ANSYS

LS-DYNA

MOLDEX3D

FEMZIP

Primer

PreSys

DYNAFORM

SKYGEN

MERCUDA

MOCEM

Germany**CADFEM GmbH**lsdyna@cadfem.dewww.cadfem.de

ANSYS

LS-DYNA

optiSLang

DIGIMAT

ESAComp

AnyBody

VPS

FTI FormingSuite

Distribution & Consulting**Europe****Distribution & Consulting****Germany****DYNAmore GmbH**uli.franz@dynamore.dewww.dynamore.de

	LS-DYNA	optiSLang	DIGIMAT
LS-OPT	LS-PrePost	LS-TaSC	DYNAFORM
Primer	D-Spex	GENESIS	FEMZIP
VisualDoc		LSTC Dummy & Barrier Models TOYOTA THUMS	

Germany**GNS**mbox@gns-mbh.comwww.gns-mbh.com

Animator	Generator	Indeed	OpenForm
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Netherland**Infinte**j.mathijssen@infinite.nlwww.infinite.nl

ANSYS Products	CivilFem	CFX	Fluent
LS-DYNA	LS-PrePost	LS-OPT	LS-TaSC

Distribution & Consulting**Europe****Distribution & Consulting****Italy****EnginSoft SpA**info@enginsoft.itwww.enginsoft.it

ANSYS

MAGMA

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FORGE

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Sculptor

ESAComp

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FTI Software

AdvantEdge

Straus7

LMS Virtual.Lab

ModeFRONTIER

Russia**STRELA**info@dynamore.com

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Sweden**DYNAMore Nordic**marcus.redhe@dynamore.sewww.dynamore.se

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μETA

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DYNAform

FormingSuite

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Sweden**GRIDCORE**info@gridcore.comwww.gridcore.se

LS-DYNA Cloud Service

Additional software

Distribution & Consulting**Europe****Distribution & Consulting****Switzerland****DYNAmoreSwiss GmbH**info@dynamore.chwww.dynamore.ch

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Distribution & Consulting**Asia Pacific****Distribution & Consulting****China****ETA – China**lma@eta.com.cnwww.eta.com/cn

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China**Oasys Ltd. China**Stephen.zhao@arup.comwww.oasys-software.com/dyna

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China**Shanghai Hengstar Technology**info@hengstar.comwww.hengstar.com

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India	Oasys Ltd. India	lavendra.singh@arup.com		
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		LS-DYNA	LSTC Barrier Models	LS-TaSC

India	EASI Engineering	rvenkate@easi.com		
	www.easi.com			
	ANSA			
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India	CADFEM Eng. Svce	info@cadfem.in		
	www.cadfem.in			
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JSOL

www.jsol.co.jp/english/cae

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<http://jp.fujitsu.com/solutions/hpc/app/lsdyna>

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Simblow

TrueGRID

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Scan FE

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Korea

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young@kostech.co.kr

www.kostech.co.kr

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www.flotrend.com.tw

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FCM

Cloud Service

Cloud Services

Japan

Fujitsu www.fujitsu.com

Germany

Gridcore www.gridcore.se

Sweden

Gridcore www.gridcore.se

United States

Gompute www.gompute.com

The Complete Courses Offered Can Be Found At: www.cadfem.de

Please check the site for accuracy and changes.

Among the many course offered:

Introduction to simulation with Diffpack
11/06/12

Introduction to explicit structural mechanics
with ANSYS-LS-DYNA and LSTC's LS-
DYNA

Working efficiently with Diffpack in ANSYS
Workbench
11/07/12

08/29/12 09/05/12
11/06/12 12/19/12

Introduction to simulation of joint- and muscle-
forces with AnyBody
09/19/12

Material Modeling with LS-DYNA
10/16/12

Efficient coupling of AnyBody with ANSYS
Workbench
09/21/12

Simulation of composites with ANSYS
Composites PrepPost and LS-DYNA
05/08/12 08/21/12

Additional Courses are offered – please check
the website for upcoming dates for: FTI
Forming Suite - DIGIMAT
DIFFPACK and others.

Contact modeling with LS-DYNA
05/22/12 11/06/12

Modeling joints with LS-DYNA
10/12/12

Individual Training: Take advantage of the
expertise of our specialists and get to know
how simulation processes in your company can
be arranged in an optimal way.

Crash simulation with LS-DYNA
09/25/12

Training Classes

Germany DYNAmore

Training Classes

The Complete Courses Offered Can Be Found At: www.dynamore.de/en

Intro LS-DYNA

09/20/12 10/15/12 10/30/12 12/10/12

Spot Welds

09/27/12

Contact Definitions

10/18/12

Dummy Modeling

06/14/12

Element types

07/04/12

Airbag Modeling

06/14/12

Plasticity

10/24/12

eta/DYNAFORM

09/17/12

Users Interfaces

11/19/12

ALE

10/11/12

Crash Analysis

12/04/12

Meshless Methods

10/11/12

The Complete Courses Offered Can Be Found At: www.lstc.com

Please check the site for accuracy and changes. Among the many course offerings are the following:

Implicit Analysis with LS-DYNA CA

June 12-13, 2012

Contact in LS-DYNA CA

June 14-15, 2012

Introduction to LS-PrePost (no charge) MI

June 18, 2012

Introduction to LS-DYNA MI

June 19-22, 2012

Composite Materials_LS-DYNA CA June 26-
27, 2012

User-Defined Materials_LS-DYNA CA

June 28-29, 2012

Introduction to LS-PrePost (no charge) CA

July 30, 2012

Introduction to LS-DYNA CA July 31 -

August 3, 2012

Advanced Options in LS-DYNA MI

August 14-15, 2012

Introduction to LS-PrePost (no charge) MI

August 20, 2012

Contact in LS-DYNA MI

August 16-17, 2012

Introduction to LS-DYNA MI

August 21-24, 2012

NVH & Frequency Domain Analysis with
LS-DYNA CA

October 9-10, 2012 Tues-Wed

Introduction to LS-OPT MI

November 6-9, 2012

Introduction to LS-PrePost (no charge) CA

November 12, 2012

Introduction to LS-DYNA CA

November 13-16, 2012

Introduction to LS-PrePost (no charge) MI

December 10, 2012

Introduction to LS-DYNA MI

December 11-14, 2012

Advanced Options in LS-DYNA MI

December 17-18, 2012

Training Classes

Sweden DYNAmore Nordic

Training Classes

The Complete Courses Offered Can Be Found At: www.dynamore.se

Please check the site for accuracy and changes.

October 2

Among the many course offerings are the following:

ANSA & Metapost, introductory course

October 9

LS-PrePost 3, introduction

September 3

Contacts in LS-DYNA

October 12

LS-PrePost 3, introduction

November 26

LS-DYNA, simulation of sheet metal forming processes

October 16

LS-DYNA, introductory course September 4

LS-DYNA, introductory course November 27

LS-OPT, optimization and robust design September 18

LS-DYNA, advanced training class in impact analysis

November 20

LS-DYNA, implicit analysis

Training Classes

DynAS+

Training Classes

The complete Training Courses offered can be found at www.dynasplus.com

Please check the site for accuracy and changes.

LS-DYNA Introduction Explicit Solver
10-12/09

LS-DYNA Introduction Implicit Solver
24/09

LS-DYNA Unified Introduction Implicit &
Explicit Solver
16-19/01, 18-21/06 & 12-15/11

LS-OPT & LS-TaSC Introduction
24-25/10

Switch to LS-DYNA
10-11/10

Switch from Ls-PrePost 2.X to 3.X
4/04 & 26/09 & 28/11

LS-DYNA Advanced Implicit Solver
25/09
-material modeling
14-15/12

LS-DYNA ALE / FSI
22-23/10

LS-DYNA SPH
21-22/05 & 8-9/10

LS-PrePost 3.0 – Advanced meshing
capabilities
5/04 & 27/09 & 29/11

LS-DYNA User Options
23-24/05

LS-DYNA – Plasticity, Damage & Failure –
By Paul DU BOIS
26-27/11
(date may be changed in Q1)

LS-DYNA – Polymeric materials – By Paul
DU BOIS
12-13/12

LS-DYNA – Geo

Engineering Technology Associates

The Complete Courses Offered Can Be Found At: www.eta.com

Please check the site for accuracy and changes.

Among the many course offerings are the following:

Introduction to LS-DYNA

June 26 - 27

July 24 - 25

August 21 - 22

Sept 18 - 19

Introduction to DYNAFORM

July 10 - 11

Aug 07 - 08

Sept 04 - 05

Intro to PreSYS

August 14

Sept 11

The Complete Courses Offered Can Be Found At: www.caeai.com

Please check the site for accuracy and changes. Among the many courses offering are the following:

ANSYS Training, CFD and FEA Consultants Serving CT, NJ, NY, MA, NH, VT

Jun 11, 2012 1 day

ANSYS DesignModeler

Middlebury, CT

Jun 16, 2012 2 days

Introduction to ANSYS Mechanical (Workbench)

Middlebury, CT

The Complete Courses Offered Can Be Found at www.hengstar.com

2012	2	3	4	5	6	7	8	9	10	11	12
An Introduction to LS-DYNA(High Level)											
Concrete & Geomaterial Modeling with LS-DYNA											
Pedestrian Safety and Bonnet Design with LS-DYNA											
Crashworthiness Theory and Technology											
LS-DYNA MPP, Airbag Simulation with LS-DYNA											
Introduction of LS-OPT which is Based on LS-DYNA											
Passive Safety and Restraint Systems Design											
Crashworthiness Simulation with LS-DYNA											
Passive Safety Simulation with LS-DYNA											
Crashworthy Car Body Development - Design, Simulation and Optimization											

Training Classes

France Alyotech Technologies

Training Classes

For course location visit www.alyotech.fr

LS-DYNA Introduction

June 04-06

Sept 10-12

Oct 01-03

Nov 12-14

Dec 03-05

LS-DYNA Thermal

Sept 13-14

LS-DYNA Implicit

Sept 17-19

Nov 19-21

LS-PrePost – Meshing

Sept 27

Nov 26

LS-PrePost – New Interface

Sept 28

Nov 27

LS-OPT Introduction

June 18-19

Dec 10-11

LS-TaSC – Topology Optimization

June 20

Dec 12

Material Modeling & User Defined

Material in LS-DYNA

July 10-11

LS-DYNA Composite

July 12-13

Pune and Bangalore

The fifth series update meetings for Oasys and LS-DYNA software were held in the Ista Hotel, Pune on 17th April 2012 and in the Taj Vivanta Hotel, Whitefield, Bangalore on 19th April 2012. Both the events attracted wide interest from user community with participants over 120 in Pune and 130 in Bangalore.

Dr. Brian Walker of Arup updated the users on new features in release 6.0.0 of LS-DYNA 971 and the upcoming features in LS-DYNA 980.

Mr. Richard Sturt of Arup updated the users on release 10 of Oasys Suite and the upcoming features in release 11 of Oasys software.

Dr. Yun Huang, Livermore Software Technology Corporation, introduced the new and upcoming features of LS-DYNA pertaining to NVH and Durability.

Mr. Takahiko Miyachi of JSOL introduced Hycrash & Digitire to the participants.

Mr. Lavendra Singh of Arup introduced FEMZIP & SIMPLEWARE software.

Both events saw enthusiastic participation from the user community, two user presentations each at Pune & Bangalore. Pune event included presentations by:

Mr. Pratap Daphal,

Tata Motors;

Mr. Vijay Kalakala,

Mercedes-Benz R&D Pvt India Ltd.

Bangalore event included presentations by

Mr. Pronoy Ghosh,

Mercedes-Benz R&D Pvt India Ltd;

Mr. Srinivasan Velusamy,

GM Technical Center Pvt Ltd.

Please contact at india.support@arup.com for information, training and support of Oasys & LS-DYNA software.



Top left – Dr. Yun Huang presenting at Bangalore event;

Top Right – delegates at Pune event; Bottom

Left – Oasys & nance team along with guests from LSTC & JSOL;

Bottom Right – delegates at Bangalore event

Presentations can be downloaded from

http://www.oasys-software.com/dyna/en/events/users_india_apr-12/users_india_apr-12.shtml

The Conference agenda is now available at the conference website: www.ls-dynaconferences.com



104	AMD	204	Dell	303	GNS	306	Moldex3D
205	ANSYS	102	DEP	200	GOMPUTE	301	Penguin
101	ARUP	403	EDAG	305	HUMANETICS	302	Red Cedar
203	BETA CAE	201	ESI-NA	204	INTEL	207	SafeTech
105	CEI	100	ETA	107	JSOL	202	SCAI
307	CRAY	304	e-Xstream	400	LSTC/DYNAmore	402	SGI
103	Datapoint	401	FEA Info d3View	300	Mellanox	206	Total CAE

June 25th 2012

www.openfoamworkshop.org/2012/OFW7.html

7th OpenFOAM® Workshop

The 7th OpenFOAM® Workshop will be held in Darmstadt (next to Frankfurt, Germany) from June 25-28, 2012 - hosted by the Center of Smart Interfaces (CSI) and the Graduate School of Computational Engineering (GSCE) of the Technische Universität Darmstadt.

The OpenFOAM® Workshop intends to bring together OpenFOAM®'s developers and users, to promote collaborative activities, exchange information and share experiences in similar areas of interest. The 7th OpenFOAM® Workshop is

- a community forum and open discussion platform for OpenFOAM® users and developers,

committee@openfoamworkshop.org

- the largest OpenFOAM® community event of the world (expected 400 participants),
- since 2006: sustainable, community-driven and non-profit.

The 7th OpenFOAM® Workshop is organized using the Community Portal of the Extend Project.

Please visit for abstract submission, registration and program schedule.

Your OpenFOAM®-Workshop Organizing Committee

October 09, 2012

www.dynamore.de/en/training/conferences/upcoming/ls-dyna-forum-2012/ls-dyna-update-forum-2011

German LS-DYNA Forum 2012 LS-DYNA Forum, 9 - 10 October 2012, Ulm, Germany

On the 9th and 10th October 2012, our 11th LS-DYNA Forum will be taking place at the Maritim Hotel in Ulm, Germany. We cordially invite you not only to attend the event but submit a paper. In your presentation, you can talk about your experiences with LS-DYNA or LS-OPT and you can discuss and exchange these experiences with other users.

User presentations will form the core of the event. General lectures given by renowned speakers are also planned as well as talks on the latest LS-DYNA und LS-OPT .

Comprehensive information all about

LS-DYNA software can be obtained from the accompanying exhibition.

The Forum will be accompanied by seminars which will be held during the week of the conference on the subjects of CPM Airbag OoP, ALE and fluid-structure inter-action, meshless methods and on concrete and geomaterial modeling.

Your presentation: You are cordially invited to contribute towards the program plan by submitting a paper. Contributions from the various areas of application of LS-DYNA/LS-OPT are planned

To Submit your papers: Please send us the title, authors and a short summary (approx. 300 words).

Dates: Submission of proposed paper:
25th May 2012

Author notification: 11th June 2012

Submission of two-page summary for proceedings: 7th Sept. 2012

Location: Maritim Hotel Ulm
Basteistraße 40, 89073 Ulm

Registration and contact

DYNAmore GmbH

Tel. +49 (0) 7 11 - 45 96 00 - 0

Fax +49 (0) 7 11 - 45 96 00 - 29

E-Mail: forum@dynamore.de

www.dynamore.de/forum12

October 24-26, 2012 Location: Kassel Germany

Environmental protection and economic aspects make electric mobility one of the great challenges of the coming years. Step-by-step it will replace traditional forms of mobility in everyday life. Therefore, a number of projects have been defined in so-called 'model regions' in order to better understand and optimize this process.

For a better understanding of electric mobility and its optimization, simulation specialist ANSYS has extended its portfolio with a set of simulation applications that can serve as models in the development and implementation

of innovative drive concepts. Structural and fluid mechanics and electromagnetic simulation models of the individual components are modeled in a consistent environment both individually and interacting, considering the drive as a complete multi-physical system – Engineering the System!

The ANSYS Conference & the 30th CADFEM Users' Meeting focus on the many simulation options in electric mobility and several other current application fields where structural mechanics, fluid mechanics and electro magnetics issues are important.

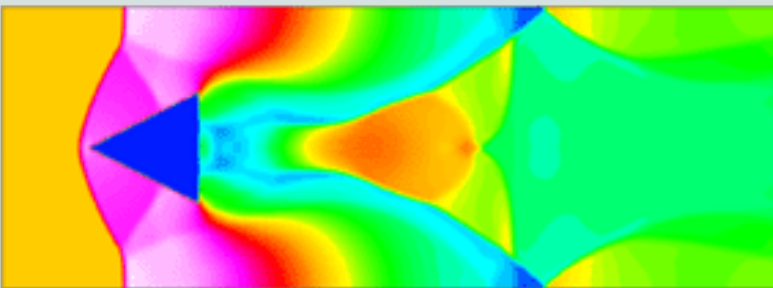
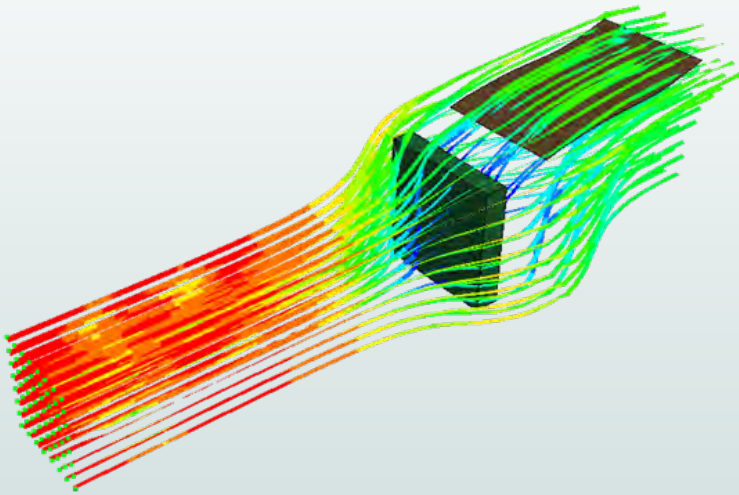
CADFEM GmbH and ANSYS Germany GmbH cordially invite you to join the conference

We look forward to your participation

The CADFEM & ANSYS Germany Team

CESE Compressible CFD

The CESE is a compressible flow solver based upon the Conservation Element/Solution Element (CE/SE) method, originally proposed by Dr. Chang in NASA Glenn Research Center. This method is a novel numerical framework for conservation laws. It has many non-traditional features, including a unified treatment of space and time, the introduction of conservation element (CE) and solution element (SE), and a novel shock capturing strategy without using a Riemann solver. To date, this method has been used to solve many different types of flow problems, such as detonation waves, shock/acoustic wave interaction, cavitating flows, and chemical reaction flows. In LS-DYNA, it has been extended to also solve fluid-structure interaction problems with the embedded (or immersed) boundary approach or moving (or fitting) mesh approach.



Features

- **Highly Accurate Compressible Fluid Solver**
- **Fluid/Structure Coupling (FSI)**
- **2D and axisymmetric capabilities**
- **Cavitation models**
- **Detonation and Chemical reaction**

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