# Argonne
NATIONAL LABORATORY

LS-DYNA®
Training Courses
November 17-19 2008
West Chicago, Illinois
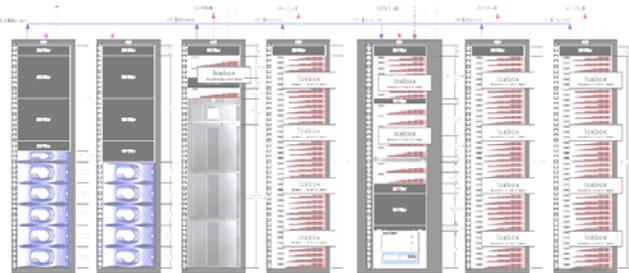
The US Department of Transportation funded Transportation Research and Analysis Computing Center at Argonne National Laboratory will hold training courses on (1) the finite element code LS-DYNA and (2) on how to use the code on the TRACC High Performance Cluster. The LS-DYNA training class is intended for knowledgeable finite element analysts who are new to, or have limited experience with, the LS-DYNA software package. The class will provide the analyst with the specifics of the LS-DYNA input language, tools and the knowledge required to model typical nonlinear transient and quasi-static events.

The typical attendee should have a background that includes a working knowledge of finite element analysis techniques, use of other nonlinear finite element software, and experience in modeling nonlinear events. Because the class uses example problems to illustrate concepts and techniques, numerous modeling 'tricks' and options are discussed; this knowledge would benefit any LS-DYNA user.

The class is designed to be example driven, i.e. simple examples are used to illustrate LS-DYNA input, execution, modeling, and post-processing. To provide attendees with an efficient use of the limited class time, no hands-on computer laboratory exercises are required. The attendees will be provided with a complete package of all the class material to include presentation material and LS-DYNA input files demonstrated during the class.

The cluster users class will present specifics on how to use LS-DYNA on the TRACC high performance cluster.

www.tracc.anl.gov

Instructors

The first two days of training will be given by Dr. Len Schwer, Schwer Engineering & Consulting Services. For the past 30 years, he has worked in areas where nonlinear analysis techniques are of primary interest. The three-dimensional co-rotational beam in the LS-DYNA element library is based on his thesis. Dr. Schwer has extensive experience in teaching LS-DYNA and working with the private and defense sectors on applied problems.

The third day of training will be given by TRACC staff.

Location

The training course will be held at the DuPage Airport Flight Center in West Chicago where Argonne's TRACC offices are located. The training sessions will be held on the third floor of the flight center. The training sessions will also be broadcast over the Internet. The link to the Adobe Connect session will be provided to registered participants.

Registration

Participation in the training course is free. Travel, lodgings, and other expenses are the responsibility of the participant. Please contact us at the number or E-mail address shown below if you would like to attend the training sessions either by Internet or in person.

Contact Information:
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TRACC
Transportation Research and Analysis Computing Center
at Argonne National Laboratory

UChicago ▶
Argonne LLC

LS-DYNA®
Training Sessions

Administrative Introductions
- Training to uses LS-DYNA on the TRACC cluster will be presented over three days.
- Days 1 and 2 will present the basics necessary to start using LS-DYNA effectively.
- Day 3 will present information on obtaining an account and using an SSH client, file transfer software and desktop virtualization.
- Sessions will start at 9:30 AM (CST) and end at 4:30 PM. Lunch will be from 12:30 PM till 1:30 PM.
- There will be a 20 minute Break in the mornings and afternoons.
- Audience participation is encouraged to maximize learning.

Monday-Tuesday
Nov 17-18, 2008
9:30 AM-4:30 PM (CST)

Introductions and Agenda

Overview of LS-DYNA: History and Capabilities

LS-DYNA *Keyword Basics and its Components

Typical Input File Development:

    Nodes

    Elements

    Material Models

    Combining Elements & Materials via
      *SECTION and *PART keywords

    Initial & Boundary Conditions

    Control Statements

    Output Specifications

Execution Syntax & Execution Control Switches

Post-Processing Basics using LS-PrePost

Introduction to the *CONTACT Keyword

*RESTART Keyword for Stopping/Starting
    Simulations

Wednesday, Nov 19, 2008
9:30 AM-4:30 PM (CST)

Becoming a User

Useful Clients

    File Transfer (SSH Secure Shell)

    Desktop Virtualization (NoMachine NX)

How to use Livermore Software on the TRACC Cluster

    LS-PrePost

    LS-DYNA
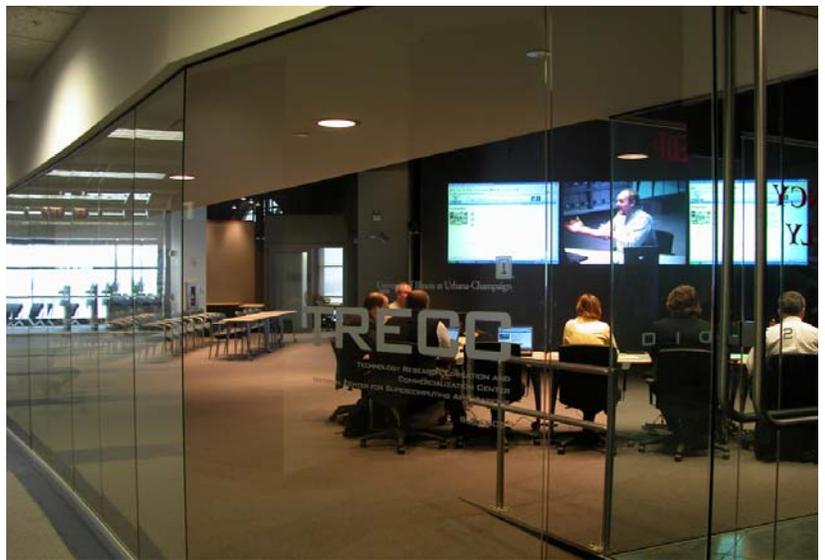
Location
- 42 miles from downtown Chicago
- 8 miles from Interstate 88 (East/West)
- 13 miles from Interstate 90 (East/West)
- 14 miles from Interstate 355 (North/South)

Directions
- From I-88 (Coming from the East or West)
  - To Farnsworth/Kirk Rd: Going North
  - To 38/ Roosevelt Rd: Going East
  - To Kautz Rd: Turn Left
  - To International Drive: Turn Right

- From I-90/ Northwest Tollway (Coming from either direction)
  - To Route 59: Going South
  - To 64/ North Ave: Going West
  - To Kautz Rd: Turn Left
  - To International Drive: Turn Left

- From I-355/ North-South Tollway (Coming from the South)
  - To 38/ Roosevelt Rd: Going West
  - To Kautz Rd: Turn Right
  - To International Drive: Turn Right

- From I-355/ North-South Tollway (Coming from the North)
  - To 64/ North Ave: Going West
  - To Kautz Rd: Turn Left
  - To International Drive: Turn Left

Hotel
Pheasant Run Resort
4051 East Main Street,
St. Charles, IL 60174
www.pheasantrun.com

ANL-TRACC Corporate Rate 2008:
ROH –Guestroom $106.00
Wireless Internet   Included
Reservations: 800-999-3319
Hotel Contact: Judy C. Freeman
    Direct: (630) 524-5042
    Email: jfreeman@pheasantrun.com