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Dr.-Ing. J. Ackva - Markgrafenstr. 21- D 91717 Wassertrüdingen

## **COURSE DYNAMIC ANALYSIS WITH CODE-ASTER**

A 2-days course <u>Dynamic Analysis with Code-Aster</u> (using Salome as Pre/Postprocessor) will be held in *Aprile 2013, from Monday 08 to Tuesday 09*. The Workshop is organized and located at Ingenieurbüro für Mechanik.

#### Content of the Course

#### Theoretical Basics

- Dynamic equations of motion
- Concept of Damping:
  - viscous damping (damping elements, Rayleigh-damping, modal damping)
  - structural (=stiffness-proportional) damping (material / global)
  - one-degree-of-freedom-system
  - multi-degree-of-freedom-system
- Homogenous solution
  - Real modes
  - Complex modes (damped modes)
- Inhomonenous solution
  - Response to harmonic loads
  - Response to transient loads
- Modal Reduction

# Dynamic Analysis using Code-Aster

- Real eigenmodes Analysis
- Complex eigenmodes Analysis
- Defining Harmonic and Transient Loads
  Creating modal reduced system matrices
- Discrete point- and line-elements for mass, damping, stiffness
- Harmonic Analysis (Direct or modal reduced)
- Transient Analysis (Direct or modal reduced)
- Modeling Damping (viscous, stiffness-proportional, modal damping . . )

The workshops consists half and half of lessons and guided exercises.

Duration: 2 Days

Language: English (german and italian if needed)

Lecturer: Dr.-Ing. Johannes Ackva

#### **Prerequistes**

Participants should already be experienced with Code-Aster, doing at least linear static analysis, using several element and load types and using Salome as Pre- and Postprocessor.

#### **Installation Prerequistes**

Each participant has to bring his own Computer (Laptop or Desktop) with Salome-Meca installed on a Linux OS. After registration to the course we will inform You which version should be installed (generally the most recent). Be aware that Salome-Meca might require a 64 bit OS.

Please test the installation of SalomeMeca, executing any tutorial taken from <a href="www.CAELinux.com">www.CAELinux.com</a> to be shure that Salome and Code-Aster both work OK. Salome can have graphic problems with non-NVIDIA graphic boards. During the seminar, there will be only few time to treat installation problems. If You are unexperienced with installation tasks, ask your administrator or ask on the forums at <a href="www.caelinux.com">www.caelinux.com</a> or <a href="wwww.caelinux.com">wwww.caelinux.com</a> or <a href="www.caelinux.com">www.caelinux.co

<u>Fee</u> 1200 € + 19% VAT (Mwst.)

VAT has not to be payed by european-nongerman participants who provide us their european VAT-ID.

Fee includes attendance to the seminar, 1 copy of a seminar short script (paper), 1 copy of amply commented command- and meshfiles (\*.comm, \*.mmed) covering exercises on seminar topics, refreshments (coffee), lunch.

<u>How to arrive</u>: Wassertrüdingen is situated in the South of Germany. Arriving by train: Reach the train station Gunzenhausen (coming from München, Nürnberg, Würzburg or north of Germany) or station Nördlingen (coming from Stuttgart). At the train station take a taxi. Arriving by car: Take the motorway exit "Ansbach" on motorway A6 (coming from Nürnberg) or exit "Dinkelsbühl/Fichtenau" on motorway A7. Then about 30 minutes to arrive at Wassertrüdingen. Arriving by plane: From airport Nürnberg/München/Frankfurt You will reach the station of Gunzenhausen by train within about 2 / 2.5 / 3 hours. From airport Stuttgart You will reach the station of Nördlingen by train within 2.5 hours.

<u>Hotel</u> We recommand the "Seebauer Hotel Die Ente". Book using <u>www.hotel.de</u> or phone (0049 (0) 9092 998-135). Take contact by phone or e-mail (<u>d.kittsteiner@seebauer-hotel.de</u>) if You need a transfer from train station Gunzenhausen or Nördlingen offered by the hotel for about 10 €.

The South of Germany is of valuable cultural and touristical interest. Even the closer region of Wassertrüdingen is worth of a some days post-seminar vacancy: Hiking in some sweet mountains, visiting the frankonian sees (<a href="www.fraenkischeseen.de">www.fraenkischeseen.de</a>), some lovely and beautyful medieval small cities (Eichstätt, Wemding, Nördlingen, Dinkelsbühl . .) or the very famous "Romantische Strasse".

#### Post-Seminar individual training days

In the days following the seminar there is the opportunity to book individual training day(s) on topics of Your special interest. This is offered only in conjunction with the preceding seminar for a special dayly rate of 650€ per day. Please contact us if You are interested in special topics to discuss Your needs.

### Registration Form for

#### COURSE DYNAMIC ANALYSIS WITH CODE-ASTER

Date: Aprile 2013, from Monday 08 to Tuesday 09

Location Ingenieurbüro für Mechanik, Markgrafenstr. 21, D 91717 Wassertrüdingen

Please send this registration form after completion to Ingenieurbüro für Mechanik:

Fax: 0049 (0)9832 708153 e-mail code-aster@code-aster.de

After receipt of Your registration we will send You an invoice. Only after payment your registration will be complete.

Cancellation conditions: Cancellation up to 4 weeks before 1<sup>st</sup> seminar day: free of charge. Cancellation up to 2 weeks before 1<sup>st</sup> seminar day: 25% of registration fee non-refundable. Cancellation up to 1 week before 1<sup>st</sup> seminar day: 50% of registration fee non-refundable. Cancellation after 1 week before first seminar day or no show at seminar: 100% of registration fee non-refundable

The participation in the seminar is at each participant's own risk. Any liability is excluded by the organizer.

If You require further information before registering, please contact us.

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Name of Participant	
Organisation / Company	
VAT-ID of company	
(european non-german compani	es only)
e-mail adress	
Phone	
Fax	
Full address where the invoice will be sent	
Date and Signature	