Rotor Dynamic Seminar

by
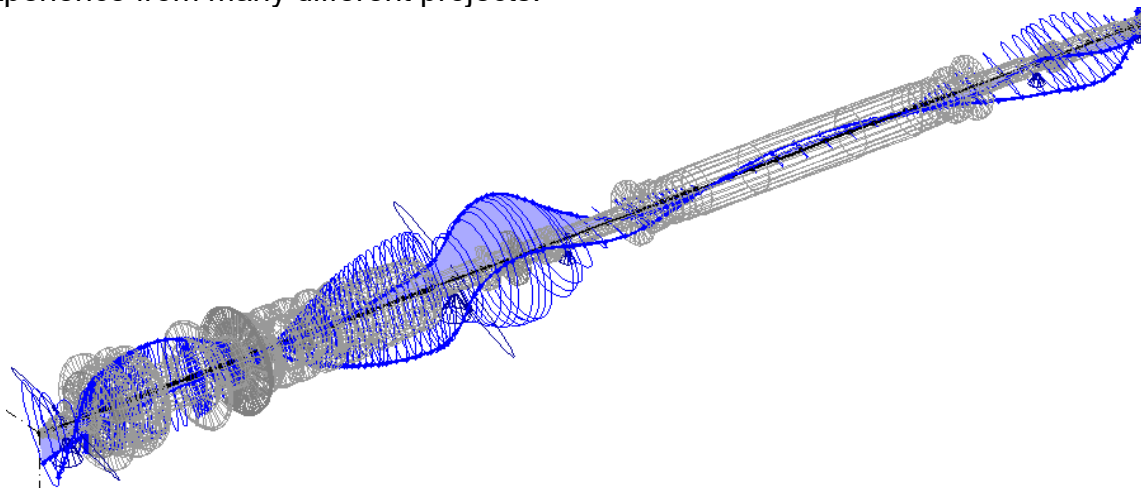

DELTA JS AG

from July 22th to 25th 2025

DELTA JS is a leading engineering and consulting company for rotor dynamics. Its in-house developed, commercial software MADYN 2000 is widely used in the realm of rotating industrial machinery to simulate the dynamics of complex rotor-gear-bearing systems with all types of bearings including fluid film bearings, rolling element bearings and active magnetic bearings.

Participants will get an insight into the vast experience of the DELTA JS engineering team with **industrial rotating machinery**. Practical relevance is ensured. Fundamental **rotor dynamic phenomena**, basic **design rules**, different types of **bearings** and their properties as well as **engineering and design standards** (ISO, API) are explained. **Case studies** of experienced problems and phenomena, which are usually not considered in standard engineering practice, are presented as well.

Attendees will be able to better anticipate potential **risks of rotating machinery** and to participate actively in the investigation of **rotor vibration problems**. Thus, the seminar is suited for many engineers of manufacturers, plant constructors, contractors and machine end users (rotating equipment specialists, design engineers, commissioning engineers, sales engineers, and project managers).

Additional two days are offered, during which the participants actively carry out a guided lateral and torsional analysis with **MADYN 2000** and learn details about the versatile features of the program (bearing analyses, coupled analyses).

Course instructors are experienced engineers of DELTA JS: Dr. Joachim Schmied, who is the founder of DELTA JS, Dr. Andreas Fuchs, who is a recognised expert in fluid film bearings, Frédéric Gaulard and Gianpaolo Rubbera, who have a wide experience from many different projects.

Rotor Dynamic Presence Seminar July 22nd to 25th 2024

Contents of the Rotordynamic Seminar (2 days):

- Basics of Rotor Dynamics
  - The Role of Rotor Dynamics in Machine Design
  - Resonance and Damping
  - Unbalance and Self-Excited Vibrations in Rotor Systems

- Lateral Analyses
  - Consideration of Bearings and Supports
  - Natural Vibration Modes, Stability
  - Unbalance Response
  - Standards for Engineering

- Torsional Analyses
  - Natural Vibration Modes
  - Potential Torsional Resonances
  - Transient Torsional Response
  - Assessment of Coupling Forces and Stresses

- Properties of Different Bearing Types
  - Rolling Element Bearings
  - Fluid Film Bearings, Oil Whirl / Whip
  - Active Magnetic Bearings

- Case Studies (experienced phenomena in real systems)
  - Rotor Stability with Tilting Pad Bearings (synch., non-synch. Properties)
  - Coupled Rotor Casing Resonance
  - Coupled Rotor Disk Vibration
  - Coupled Torsional Lateral Vibrations
  - Gear Mesh Excitation
  - Rubbing
  - Internal Friction
  - Acoustic Excitation
  - Hot Spots (Morton Effect)

After each block there will be time for discussions. All attendees will receive the seminar documents in English.

Rotor Dynamic Analysis with MADYN 2000 (2 days):
- Introduction to MADYN 2000
- Guided Exercises: Lateral Analysis of a Compressor, Torsional Analysis of a Compressor Shaft Train
- Demonstrations of further Features (coupled analyses, details of bearing analyses)

Organisational Information

Venue of the seminar is the Sheraton Hotel in Zurich. (see http://www.sheratonzurichhotel.com/) next to the Technopark Zurich, where the offices of DELTA JS are located. A block of rooms is reserved until July 5th 17:00 to a special price of CHF 289.- per person and night including breakfast.

A list of further nearby hotels can be provided.

Please book your accommodation directly by contacting the hotel of your choice.

The seminar documentation will be sent to participants before start of the seminar as PDF files.

For the **Rotordynamic Analysis with MADYN 2000** on the 3rd and 4th day each participant will receive a download link to install MADYN 2000 with a temporary licence and examples. It is expected that participants bring their own laptop.

Deadline for binding registration is June 14th.

DELTA JS reserves the right to cancel the seminar in case too few people sign up at this date.

Fee and Payment

CHF 3'000.- including meals (4 lunches, 1 dinner) and refreshments.

Invoice will be issued upon registration and shall be paid before the seminar.