

DeMaMech Exchange Summary

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Home Institute: Osaka University
Host Institute: Katholieke Universiteit Leuven
Period: Feb. 2006 – July 2006

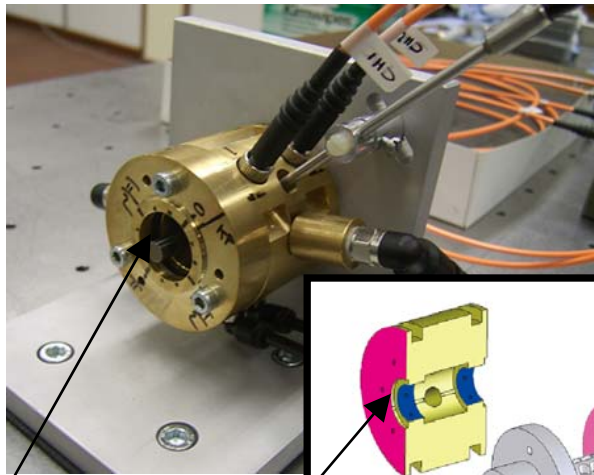
• What I did in KUL is...

Research: - Investigation of the whirl behaviour of a micro-turbine rotor
Lectures: - Academic English course

Research

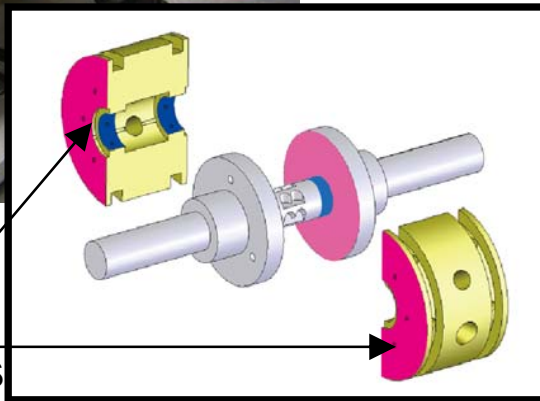
Aim: **To investigate** the behaviour of high rotational speed operated micro-turbine rotor

#1: Measuring whirl vibration of balanced rotor



Rotor

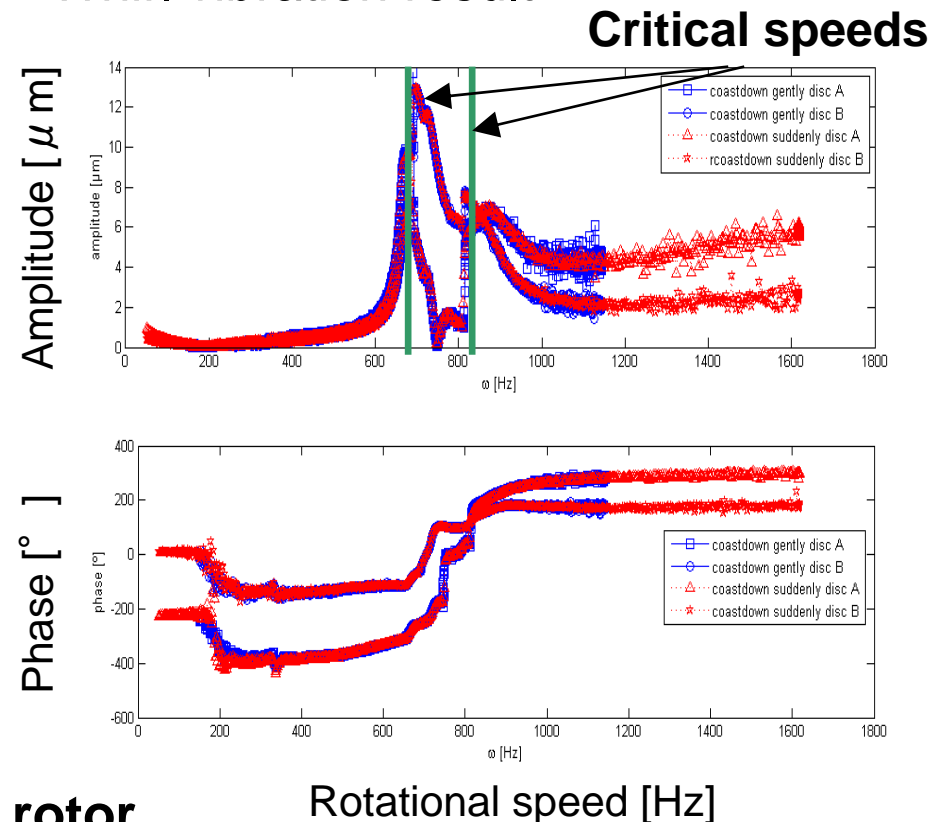
Split air bearings



Max. speed: **100,000 rpm**

← Air bearings, Balancing the rotor

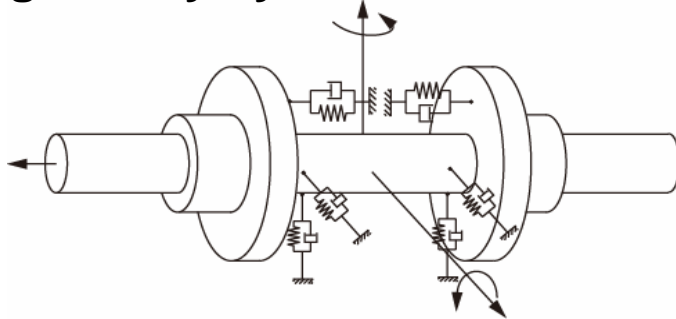
- Whirl vibration result



Research & Lecture

#2: Calculations of whirl vibration behavior

- Rigid-body dynamics model



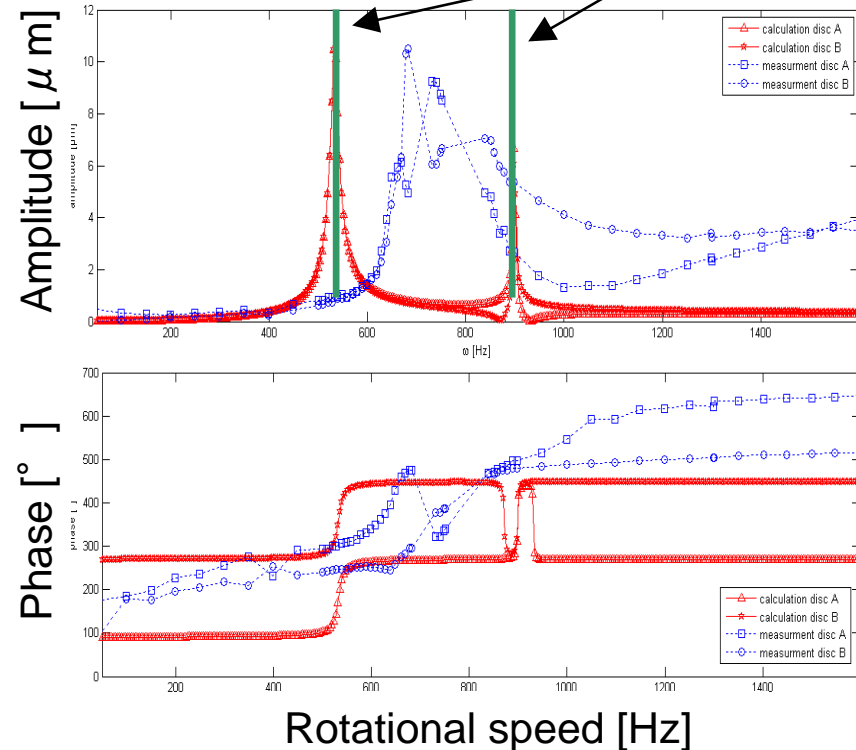
- Forced vibration calculations with frequency analysis response

- Bearing calculations (Stiffness & damping rate)

- Academic English course

- Twice a week in February & March
- Focused on general writing and academic English writing
- Several assignments related to the subject of each student

Calculated critical speeds



Exchange student life in BE

- **Orientation days**
 - Introduction of KUL, a day trip to Gent, party etc.
- **Residence**
 - Dormitory with around 40 students
(half Belgian and half international students)
 - In my case, took over from former DeMaMech exchange student
- **Lunch with my supervisor and his colleague**
- **Visiting in BE & other Europe countries**

