The presentation of the first-year Ph.D. students

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Introduction - Previous studies

- **2008 – 2011**
  - Bc. in Mechanical Engineering

- **2011 – 2013**
  - Ing. in Mechanical Engineering Design

Faculty of Mechanical Engineering, Brno

Institute of Machine and Industrial Design
Title of thesis:

Experimental Study of Wheel Flange Lubrication

Supervisor: Ing. Milan Omasta

Aim of thesis:

Experimental determination of the influence of operating conditions (especially amount of grease) on the tribological aspects of the wheel flange/rail contact
Wear in dry wheel flange/rail contact

- Pin-on-disc and Twin-disc experiments

- Sudden transition from severe to catastrophic regime

- Scoring; Scuffing and Seizure phenomena

Regimes of wear

Temperature rise in contact

Source: LEWIS, OLOFSSON: Mapping rail wear regimes and transitions.
Publications:


Current activities - Teaching and learning activities

Teaching and learning activities:

Teaching:
- Winter semester
  - 5KS (Machine Design – Machine Elements)
  - ZTR (Tribology)
- Summer semester
  - 6KT (Machine Design – Mechanical Drives)
  - 6KM (Machine Design – Mechanisms)

Learning:
- 9AJ (English for Doctoral Degree Study)
- 9MOP (Methodologies of Scientific Work)
- 9VPR (Research Project and its Management)
- 9EHD (Elastohydrodynamics)
- 9EXT (Experimental Methods in Tribology)
Title of thesis:

*Lubricated contacts in a vibration environment*

**Supervisor:** prof. Ing. Ivan Křupka, Ph.D.

**Aim of thesis:**

Study of the *effect of vibrations* (especially lateral) to behavior of lubricated contacts, particularly under *elastohydrodynamic lubrication*.

**Future work:**

- Literature overview
- Research aim/research plan

- Motion of contact relative to the disk
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Thank you for your attention