MEC_7

Title of the doctoral program

Mechanical Engineering - The measurement of vibrations in rotating turbine disks for blade monitoring by tip timing technique.

Title of the research activity

Blade vibration monitoring during bladed disk rotation.

Short description of the research activity

The Non-Intrusive Stress Measurement System (NSMS), known as tip timing is a technique to measure blade vibration during the bladed disk rotation. The technique still needs improvement in the data treatment related to different vibration modes of the disk. The research activity will be focused on the study of the different algorithms proposed in literature and in the developing of improvements to increase the measurement accuracy.
The developed algorithm will be tested on the tip timing system installed in the spinning rig in the laboratory LAQ AERMEC of the Department of Aerospace and Mechanical Engineering. A dummy disk will be purposely designed.

Scientific responsible (name, surname, role, email)

Teresa Berruti. Associate professor, teresa.berruti@polito.it

Number of vacancies for XXXI cycle (3 years program)

1

Specific requirements (experiences, skills)

Vibration theory knowledge is required. Experience in the use of matlab is appreciated. Experience in the use of finite element coded like ANSYS is also appreciated

Website of the research group (if any)

http://www.aermec-dimec.polito.it/