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**Professor Fakher CHAARI**

**Biography:**

**Fakher CHAARI is a full Professor in Mechanical Engineering at the National School of Engineers of Sfax – Tunisia. His personal research focuses on Machine and Structure dynamics, Vibro-acoustic behavior of machines and structures. He is the author of more than 40 peer reviewed journal articles and more than 30 national and international conference papers. He chaired several conferences and edited proceedings of conferences. He is Co-editor of Springer Book Series “Applied Condition Monitoring”. He was also guest editor in special issues of Applied Acoustics, European Journal of Computational Mechanics and Mechanics and Industry journals. He is general secretary of Tunisian Society of Industrial Acoustics and Vibration (ATAVI) and member of Tunisian Society of Mechanics (ATM)**

**Abstract-2: Gear transmissions are widely used in several industrial applications. They have a lot of advantages such us compactness, ability to transmit high torques, efficiency … However, noise and vibration remain a major concern for this kind of transmission. In order to understand and then control dynamic behavior of gears, one can use experimental based approach which can be expensive and may not provide parametric case studies. Modeling based approach is an interesting approach allowing studying many operating conditions and is able to reproduce real object behavior. This presentation will be focused on this approach. First, basics of gear modeling will presented. Then, special cases of complex gearboxes, like planetary and multistage ones, will be investigated taking into account several operating conditions with fluctuation of load and speed. Case studies will be presented and comparison between experimental results and simulation will be done.**

**Professor Mohamed HADDAR**

**Biography:**

**Mohamed HADDAR is a full professor at National Engineering School of Sfax since 1994. He is the head of The Laboratory of Mechanics Modeling and Production. His research activities focus on Dynamic behavior and Vibro-acoustic of machines and structures, Mechanical behavior of materials and structures and Production and design and operation of systems. Professor Mohamed Haddar is involved in several research projects that are focused on dynamics of rotating machines elements like projects with IST-CTN research group of Professor Jose Antunes, University of Cantabria in Spain (Professor Fernando Viadero Rueda), University of Compiègne ( Professor Mabrouk Ben Tahar). ..**

**Professor Haddar authored more than two hundred papers. He is co-editor of a book series with Springer "Applied Condition Monitoring" under which he edited several conference proceedings. He was guest editor in special issues of Applied Acoustics, European Journal of Computational Mechanics and Mechanics and Industry journals. He is vice president of Tunisian Society of Industrial Acoustics and Vibration (ATAVI) and vice president of Tunisian Society of Mechanics (ATM)**

**Abstract-1: Tuned Vibration Absorber has been invented since 1900s. It is mainly composed of a mass, a spring and a damper and has a great effect in suppressing vibrations of machines and structures. However, this absorber allows vibration mitigation for a narrow frequency band. It has been shown that the nonlinear vibration absorber incorporating a nonlinear coupling spring element could offer performance advantages in a large frequency range. The objective of this presentation is to show through simulation and experience the efficiency of such non linear absorber. Simulations will be done using novel techniques based on Asymptotic Numerical Method (ANM). A case study of milling machine will be detailed at the end of the presentation.**

**Prof. Mohamed HADDAR and Prof. Fakher CHAARI**

**主持人：**

**蒋伟康 教授**

**主讲人：**

**主题：**

**1. Non-linear Vibration Absorbers**

**2. Gear Dynamics Modeling**

**学术讲座**

**时间： 9月1日 AM 9:30 – 11:30 地点： 机械楼A楼F210**