

# MECHANICS COLLOQUIUM



Monday, March 7, 2005  
13:45-14:45 h.  
Delft University of Technology  
Faculty of Mechanical Engineering  
Mekelweg 2, Delft  
Room M (38-8A-2<sup>nd</sup> floor)

## “An Experimental and Numerical Approach for Pattern Formation Phenomena”

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**Abstract** - In this talk, the formation of wavy surfaces in rolling contact is discussed both experimentally and numerically. Two kinds of pattern formation phenomena are treated. One is the corrugation development on the surface between the rolling disks. It is developed with the mechanism of the self-excited vibration due to time lag. Another one is the corrugation development on the rail surface due to the repeated passage of the wheels. The numerical approach in multibody dynamics is discussed and some numerical results are shown. Some experimental results of these phenomena are presented.

**About the speaker** - Dr. Terumichi is an associate professor in applied mechanics at the department of Mechanical Engineering at Sophia University, Tokyo, Japan. He is interested in vehicle dynamics, flexible multibody dynamics, and motion and vibration control. Currently he is working on the fluctuation of contact force in high speed rail/wheel systems, corrugation development on rail/wheel systems, mechanism of pattern formation in grinding, motion and control of a tethered system, and the modeling of a tire with local part deformation. His PhD degree is in Engineering from Keio University.