MECHANICS COLLOQUIUM

Monday, May 30, 2005,
15:45-16:45 h.
Delft University of Technology
Faculty of Mechanical Engineering
Mekelweg 2, Delft
Room J (38-8D-1th floor)

"On Flexible Multibody Simulations and Experiments for Large Deformation Problems''

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Abstract - Computer simulations with the absolute nodal coordinate formulation for large deformation problems in flexible multibody dynamics are compared to the real experiments. A high-speed camera was employed to capture the deformed shapes of thin beams and plates, and the measured data was used to calculate precise values for stiffness and damping ration of the objects. Also a rotating strip and a rotating chain were formulated for computer simulation, and the computational results are also compared to the experiments.

Figure 1. Maximum deformation of a plate with a 0.26 kg attached mass

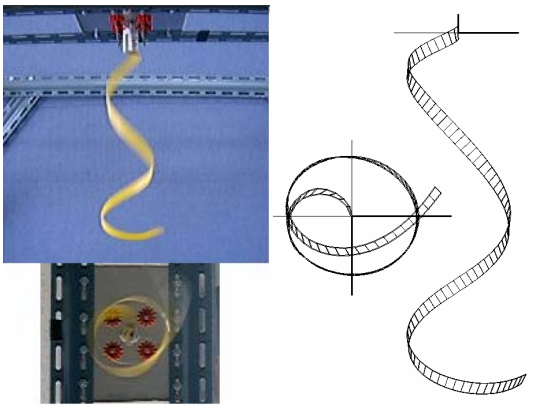

Figure 2. Experimental and simulated frames of the rotating strip steady motion

About the speaker – Dr. Wan-Suk Yoo is a full professor in applied mechanics at the department of Mechanical Engineering at Pusan National University, Pusan, South Korea. He is interested in vehicle dynamics and flexible multibody dynamics. Currently he is also director of the National Research Laboratory of CAE. His PhD degree is in Mechanical Engineering from the University of Iowa. (http://cae.me.pusan.ac.kr and wsyoo@pusan.ac.kr)