TECHNION – Israel Institute of Technology

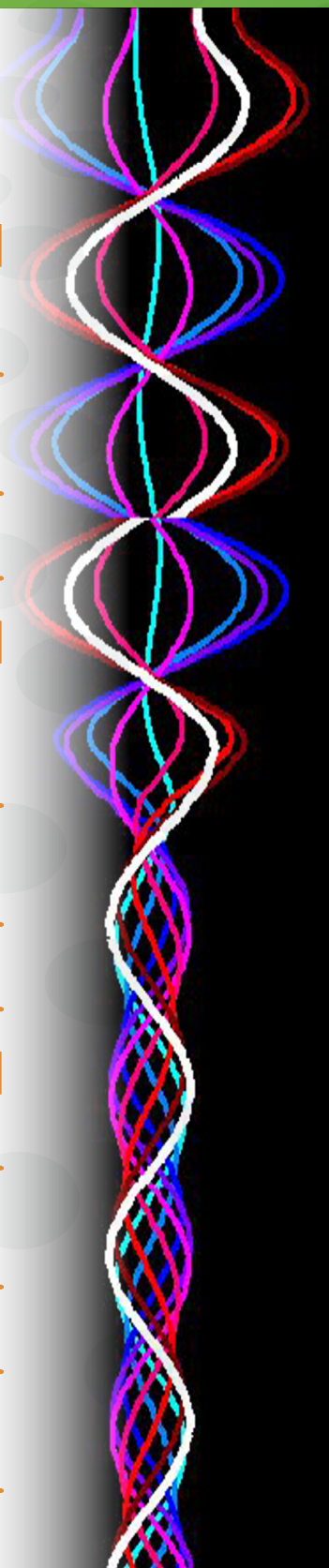
James H. Belfer Memorial Symposium

Structural Dynamics Systems

Design, Control and Energy Harvesting

Monday, February 27, 2012

Butler Auditorium, Neaman Institute, Technion



Organizers: Prof. Izhak Bucher and Prof. Yoram Halevi

Faculty of Mechanical Engineering, Technion

Program:

8:30-9:00 Registration

9:00-9:15 Welcome addresses

Session I : Energy Harvesting

9:15-10:05 **Keynote Lecture:**
Daniel J. Inman, Department of Aerospace Engineering, University of Michigan
Harvesting energy from vibrations: making the most of nonlinearity

10:05-10:30 **Nadav Cohen, Izhak Bucher,** Faculty of Mechanical Engineering, Technion
Shedding light on the dynamical behavior of a bi-stable energy harvester using fast-slow decomposition and analytical investigation

10:30-10:55 **Haim Abramovich, Eugeny Harash**, Faculty of Aerospace Engineering, Technion
Harvesting energy using piezoelectric material-from micro to macro

10:55-11:20 Coffee break

Session II: Aerospace Applications

11:20-12:05 **Keynote Lecture:**
David J. Ewins, Mechanical Engineering, Imperial College London & Department of Aerospace Engineering, University of Bristol
Current problems and future directions in jet engine structural dynamics

12:05-12:30 **Daniella Raveh,** Faculty of Aerospace Engineering, Technion
Frequency lock-in and limit-cycle oscillation phenomena in transonic aeroelastic systems

12:30-12:55 **A. Elka, Z. Sherf, D. Fogel**, Rafael
Structural modal analysis based on free flight vibration response data only

12:55-14:30 Lunch

Session III: Signal Processing

14:30-14:55 **Simon Braun**, Faculty of Mechanical Engineering, Technion
On the decomposition of Vibration Signals

14:55-15:20 **Shamgar Ouaknin, Yiska Goldfeld**, Faculty of Civil Engineering, Technion
An OMR based sub-structuring approach for vibration-based damage identification

15:20-15:45 **Yoram Halevi, Lea Sirota** Faculty of Mechanical Engineering, Technion
Modeling and control of flexible structures with boundary damping

15:45-16:10 **Z. Sherf, A. Elka , P. Hopstone**, Rafael
Methodology for the estimation of the equivalence between a laboratory simulated shock sequence and a real-life environment