

**Professor Arun K. Misra**

See:

- <https://www.mcgill.ca/mecheng/people/staff/arunmisra>
- <http://people.mcgill.ca/arun.misra/>
- <http://people.mcgill.ca/arun.misra/?View=Publications>
- <https://scholar.google.com/citations?user=tqD0IuIAAAAJ&hl=en>
- [http://www.researchgate.net/profile/A\\_Misra](http://www.researchgate.net/profile/A_Misra)

Mechanical Engineering  
McGill University

**Education:**

Ph.D. University of British Columbia  
B.Eng. Indian Institute of Technology

**Research Interests:**

The research interests of Professor Misra are in the areas of satellite dynamics and control, space robotics, and dynamics of aerospace structures. The current focus is on the study of active space debris removal using robots, dynamics of tethered space systems, spacecraft motion in the vicinity of asteroids, formation flying of satellites, and space elevator.

**Selected Publications:**

M. Paak, M.P. Païdoussis and A.K. Misra, “Nonlinear vibrations of cantilevered circular cylindrical shells in contact with a quiescent fluid”, Journal of Fluids and Structures, Vol. 49, pp 283-302, 2014

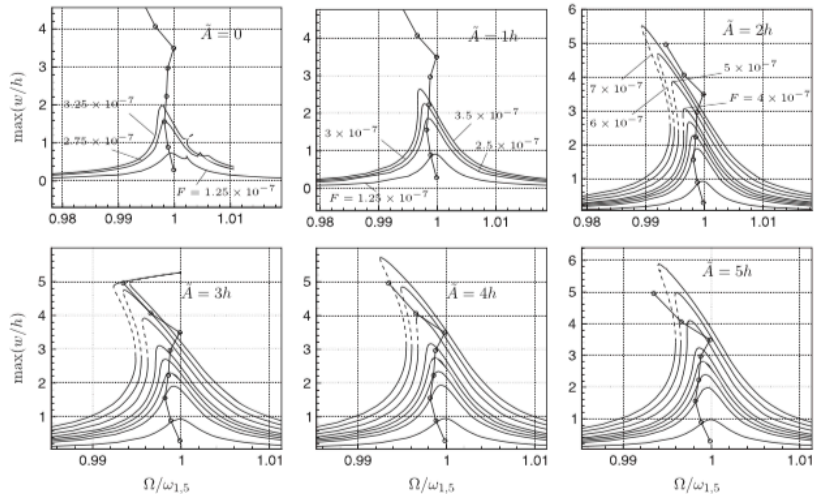


Fig. 14. Frequency–response curves of a 75%-filled shell, without companion mode participation, around the fundamental frequency  $\omega_{1,5}$  for imperfection shape  $\hat{n} = 10$  and for various  $\hat{A}$ ; the key is the same as for Fig. 13.

From: M. Paak, M.P. Païdoussis and A.K. Misra, “Nonlinear vibrations of cantilevered circular cylindrical shells in contact with a quiescent fluid”, Journal of Fluids and Structures, Vol. 49, pp 283-302, 2014

Paak, M., Païdoussis, M.P. and Misra, A.K., "Nonlinear dynamics and stability of cantilevered circular cylindrical shells conveying fluid", *Journal of Sound and Vibration*, Vol. 332, 2013, pp. 3474-3498.

K.N. Karagiozis, M.P. Païdoussis, M. Amabili and A.K. Misra, "Nonlinear stability of cylindrical shells subjected to axial flow: theory and experiments", *Journal of Sound and Vibration*, Vol. 309, No. 3, pp 637-676, 2008

K.N. Karagiozis, M.P. Païdoussis and A.K. Misra, "Transmural pressure effects on the stability of clamped cylindrical shells subjected to internal fluid flow: theory and experiments", *International Journal of Non-Linear Mechanics*, Vol. 42, No. 1, pp 13-23, 2007

K.N. Karagiozis, M. Amabili, M.P. Païdoussis and A.K. Misra, "Nonlinear vibrations of fluid-filled clamped circular cylindrical shells", *Journal of Fluids and Structures*, Vol. 21, No. 5, pp 579-595, 2005

K.N. Karagiozis, M.P. Païdoussis, A.K. Misra and E. Grinevich, "An experimental study of the nonlinear dynamics of cylindrical shells with clamped ends subjected to axial flow", *Journal of Fluids and Structures*, Vol. 20, No. 8, pp 801-816, 2005

Karagiozis, K., Païdoussis, M.P., Grinerich, E., Misra, A.K. and Amabili, M., "Stability and nonlinear dynamics of clamped circular cylindrical shells in contact with flowing fluid", *IUTAM Symposium on Integrated Modelling of Fully Coupled Fluid Structure Interactions Using Analysis, Computations and Experiments*, New Brunswick, NJ, June 2003, pp. 375-390.

Misra, A.K., Wong, S.S.T. and Païdoussis, M.P., "Dynamics and stability of pinned- clamped and clamped-pinned cylindrical shells conveying fluid", *Journal of Fluids and Structures*, Vol. 15, pp. 1153-1166, 2001.

V.B. Nguyen, M.P. Païdoussis and A.K. Misra, "A CFD-based model for the study of the stability of cantilevered cylindrical shells conveying viscous fluid", *Journal of Sound and Vibration*, Vol. 176, No. 1, pp 105-125, 1994

V.B. Nguyen, M.P. Païdoussis and A.K. Misra, "An experimental study of the stability of cantilevered coaxial cylindrical shells conveying fluid", *Journal of fluids and structures*, Vol. 7, No. 8, pp 913-930, 1993

M.P. Païdoussis, A.K. Misra and V.B. Nguyen, "Internal- and annular-flow-induced instabilities of a clamped-clamped or cantilevered cylindrical shell in a coaxial conduit: the effects of system parameters", *Journal of Sound and Vibration*, Vol. 159, no. 2, pp 193-205, 1992

M.P. Païdoussis, V.B. Nguyen and A.K. Misra, "A theoretical study of the stability of cantilevered coaxial cylindrical shells conveying fluid", *Journal of Fluids and Structures*, Vol. 5, No. 2, pp 127-164, 1991

A. El Chebair and A.K. Misra, "On the dynamics and stability of cylindrical shells conveying inviscid or viscous fluid in internal or annular flow", *Journal of Pressure Vessel Technology*, Vol. 113, No. 3, pp 409-417, 1991

A. El Chebair, A.K. Misra and M.P. Païdoussis, "Theoretical study of the effect of unsteady viscous forces on inner- and annular-flow-induced instabilities of cylindrical shells", *Journal of Sound and Vibration*, Vol. 138, No. 3, pp 457-478, 1990

A. El Chebair, M.P. Païdoussis and A.K. Misra, "Experimental study of annular-flow-induced instabilities of cylindrical shells", *Journal of Fluids and Structures*, Vol. 3, No. 4, pp 349-364, 1989

A.K. Misra, M.P. Païdoussis and K.S. Van, "On the dynamics of curved pipes transporting fluid. Part I: inextensible theory", *Journal of Fluids and Structures*, Vol. 2, No. 3, pp 221-244, 1988

A.K. Misra, M.P. Païdoussis and K.S. Van, "On the dynamics of curved pipes transporting fluid. Part II: extensible theory", *Journal of Fluids and Structures*, Vol. 2, No. 3, pp 245-261, 1988