



Professor Mahesh Pandey

See:

<https://uwaterloo.ca/civil-environmental-engineering/profile/mdpandey>

https://www.researchgate.net/scientific-contributions/73324866_Mahesh_D_Pandey

Civil and Environmental Engineering
University of Waterloo, Canada

Biography:

Mahesh Pandey is a Civil and Environmental Engineering Professor at the University of Waterloo, as well as an Industrial Research Chair at the Natural Sciences and Engineering Research Council (NSERC). He is an internationally recognized research professor in the field of risk management and life cycle methods.

Dr. Pandey has extensive research experience in the areas of mechanics and reliability of engineering structures. His research interests include the reliability of engineering systems, structural dynamics and passive control, estimation of the life-time distribution of an asset using inspection and surveillance data, optimum asset replacement/retirement scheduling, and the modelling of deterioration as a random process to predict failure probability over time. Other interests of Dr. Pandey's include the derivation of information from a small sample of data, maintenance scheduling given the life-time distribution of an asset, and cost-benefit analysis of risk management programs.

The specific goals of his research program are to advance the probabilistic analysis techniques for estimating reliability and remaining life of critical systems, structures and components. Dr. Pandey is also developing models and tools for optimizing inspection, maintenance and life-cycle management strategies, and a general, plant-level risk management model to integrate both engineering and business risks.

As a result of his work, Dr. Pandey has received several awards and honours. He was the recipient of the Premier's Research Excellence Award for the Province of Ontario in 2003, as well as the UWaterloo Faculty of Engineering Distinguished Performance Award in 1999 and 2002. Additionally in 1998, Dr. Pandey was presented with the Governor General of Canada's Gold Medal.

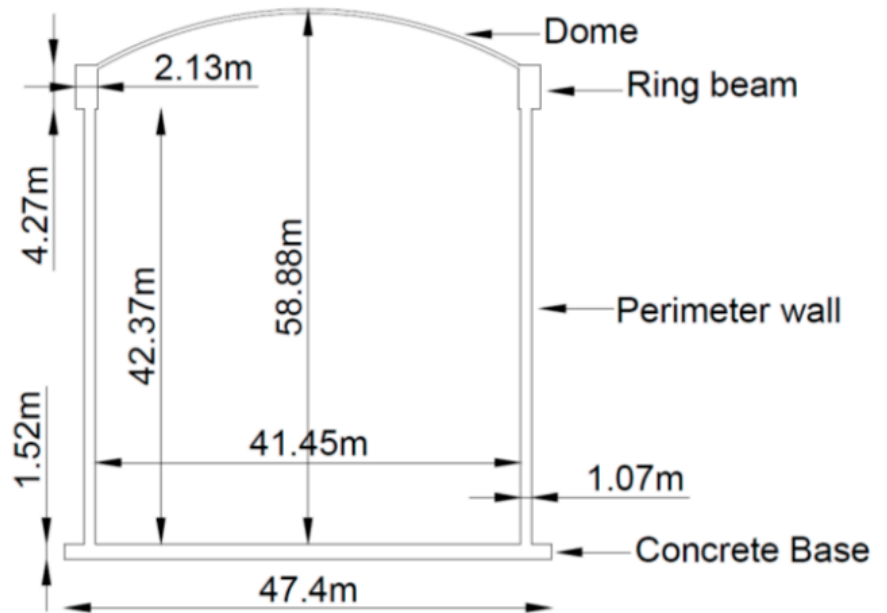


Figure 1: Prestressed concrete containment.

From: Georgios P. Balomenos and Mahesh D. Pandey, "Probabilistic evaluation of concrete strains for assessing prestressing loss in nuclear containment segments", 9th International Conference on Fracture Mechanics of Concrete Structures (FramCoS-9, V. Saouma, J. Bolander and E. Landis (Editors) 2016

Selected Publications:

- Pandey, M. D. and Sherbourne, A. N. (1991) Buckling of anisotropic composite plates under stress gradient. *ASCE Journal of Engineering Mechanics*, 117 260–275.
- Sherbourne A.N., Pandey M.D., 1991, Differential quadrature method in the buckling analysis of beams and composite plates, *Computers and Structures* 40: 903–913.
- M. D. Pandey and A. N. Sherbourne, “Imperfection sensitivity of optimized, laminated composite shells: a physical approach,” *International Journal of Solids and Structures*, vol. 27, no. 12, pp. 1575–1595, 1991.
- Sherbourne, A. N. and Pandey, M. D. (1992) Effects of in-plane restraints on the stability of laminated composite plates. *Composite Structures*, 20, 73–81.
- Pandey, M. D., & Sherbourne, A. N. (1993). Postbuckling behaviour of optimized rectangular composite laminates. *Composite Structures*, 23(1), 27-38.
- Pandey MD, Sherbourne AN (1993) Stability analysis of inhomogeneous, fibrous composite plates. *Int J Solids Struct* 30(1):37–60
- Pandey, M.D., Kabir, M.Z., and Sherbourne, A.N., 1995. Flexural-torsional stability of thin-walled composite I-section beams, *Composites Engineering* 5(3): 321-342.
- M.D. Pandey, D. Lu and D. Komiljenovic, “The impact of probabilistic modeling on predicting the remaining life of pipes in nuclear plants”, *Proceedings of the 17th International Conference on Nuclear Engineering (ICONE17)*, Brussels, Belgium, July 12-16, 2009, Paper No. ICONE17-75420
- M.D. Pandey, D. Lu and Jovica Riznic, “An empirical Bayesian method for assessing the flow-accelerated corrosion (FAC) rate in feeder pipe bends”, *Proceedings of the 20th International Conference on Nuclear Engineering (ICONE20)*, Anaheim, California, USA, July 30-August 3, 2012
- Zhang, D. Y., Li, X., Yan, W. M., Xie, W. C., & Pandey, M. D. (2013). Stochastic seismic analysis of a concrete-filled steel tubular (CFST) arch bridge under tridirectional multiple excitations. *Engineering Structures*, 52, 355–371.
- Georgios P. Balomenos and Mahesh D. Pandey, “Probabilistic evaluation of concrete strains for assessing prestressing loss in nuclear containment segments”, *9th International Conference on Fracture Mechanics of Concrete Structures (FraMCoS-9)*, V. Saouma, J. Bolander and E. Landis (Editors) 2016